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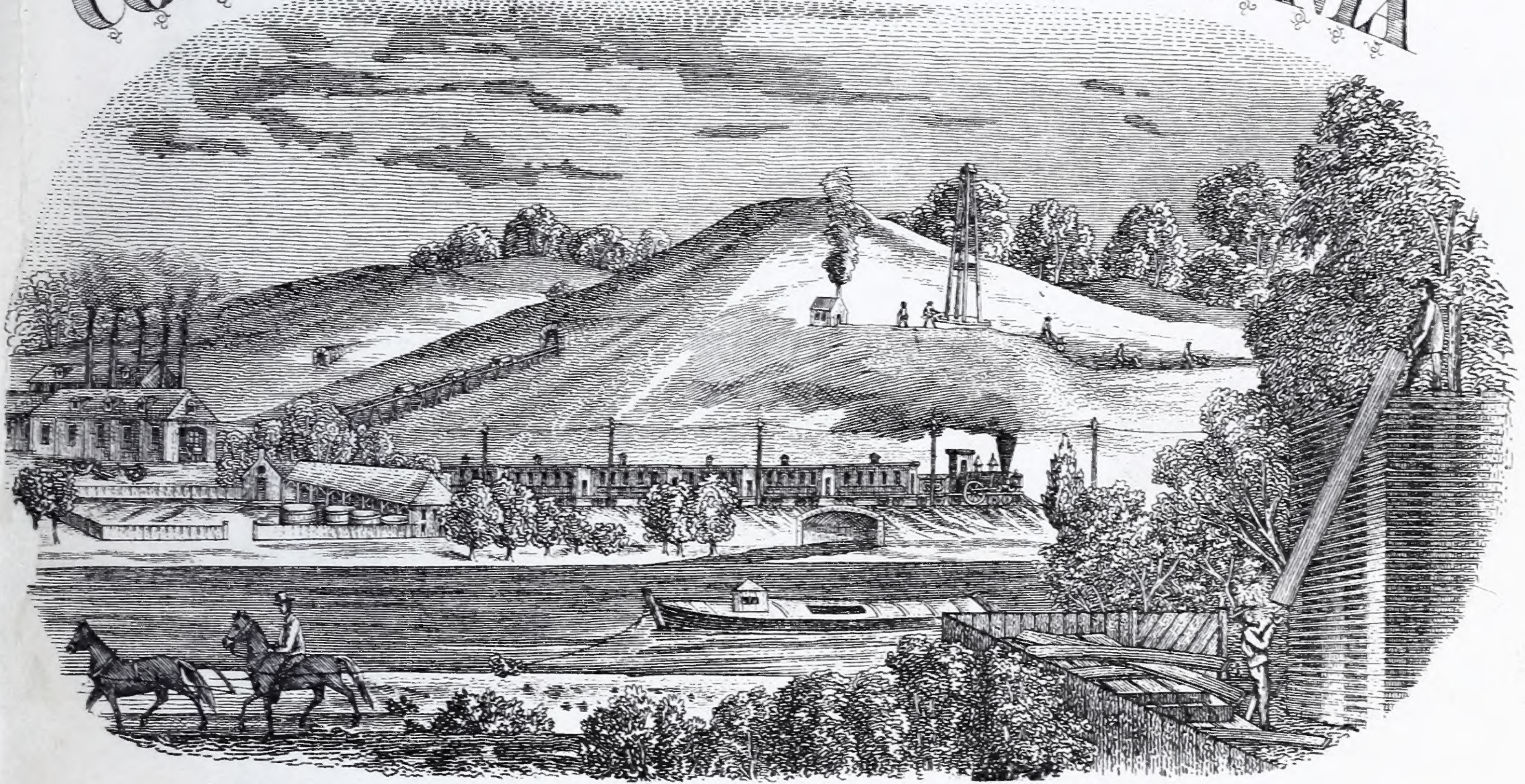
ANNUAL REPORT
OF THE
Secretary of Internal Affairs
OF THE
COMMONWEALTH OF PENNSYLVANIA


H.J. Toudy & Co.

PART III.
INDUSTRIAL STATISTICS
VOL. IV.

1875-6.

HARRISBURG
B.F. MEYERS
STATE PRINTER
1877.

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ERRATA.

On page 324 to 330, inclusive, last column, read "weigh-master" instead of "remarks."

On page 338, third line from the bottom, read "$2\frac{1}{2}$ in." instead of "2 ft. 6 in."

On page 209, first line, read "30,000" instead of "20,000."

COMMUNICATION.

Department of Internal Affairs,
Bureau of Industrial Statistics,
Harrisburg, *March* 1, 1877.

Hon. William M'Candless,
Secretary of Internal Affairs:

Sir:—I have the honor to present herewith the Fourth Annual Report of the Bureau of Industrial Statistics.

It has been my aim to present in detail the workings of the varied industries in the several portions of the Commonwealth, thereby enabling those engaged in the same kind of business or pursuits to compare prices of labor, &c., deeming this of more importance than general tabular statements, where the identity of establishments is lost in the grand aggregate.

I am under obligations to Hon. Richard Vaux and Messrs. Peter Wright & Sons, Philadelphia; H. E. Wrigley, Esq., Titusville; Mr. George H. Thurston, Pittsburgh; Prof. S. S. Rathvon, Lancaster, and David Edmunds, Esq., Wiconisco, Dauphin county, for valuable assistance.

"The Centennial" is a contribution from the pen of Gen. C. B. Norton, of Philadelphia, a gentleman who was connected with the management of the Centennial Exposition, and who had access to all the information necessary to be obtained.

I desire also to acknowledge the kindness of the general business community, in promptly and willingly answering all inquiries forwarded from this office. To them I am, in a great measure, indebted for the completeness of the report.

Respectfully submitted,
W. HAYES GRIER,
Chief of the Bureau.

REPORT

OF THE

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P. J. Roebuck, R., Litiz.

XV—DAUPHIN.

A. J. Herr, R., Harrisburg.

XIV—LEHIGH.

Evan Holben, D., Allentown.

XVII—LEBANON.

George P. Meily, R., Jonestown.

XVIII—NORTHAMPTON.

David Engleman, D., Easton.

XIX—CHESTER.

James B. Everhart, R., West Chester.

XX—LUZERNE.

G. B. Seamans, R., Pleasant Valley.

XXI—LUZERNE.

E. C. Wadhams, R., Wilkesbarre.

XXII—MONROE, PIKE AND CARBON

Charlton Burnett, D., Stroudsburg, Monroe county.

XXIII—BRADFORD AND WYOMING.

William T. Davies, R., Towanda, Bradford county.

XXIV—LYCOMING, MONTOUR, SULLIVAN AND COLUMBIA.

Rob't P. Allen, D., Williamsport, Lycoming county.

XXV—TIOGA, POTTER AND M'KEAN.

C. H. Seymour, R., Wellsboro', Tioga county.

XXVI—SUSQUEHANNA AND WAYNE.

Eugene B. Hawley, D., Montrose, Susquehanna county.

XXVII—UNION, SNYDER AND NORTHUMBERLAND.

A. H. Dill, D., Lewisburg, Union county,

XXVIII—YORK.

H. G. Bussey, D., Shrewsbury.

XXIX—SCHUYLKILL.

Luther R. Keefer, R., Cressona.

XXX—SCHUYLKILL.

William L. Torbert, IND. D., Girard Manor.

XXXI—PERRY, MIFFLIN AND JUNIATA.

David M. Crawford, D., Mifflintown, Juniata county.

XXXII—CUMBERLAND AND ADAMS.

James Chestnut, D., Shippensburg, Cumberland county.

XXXIII—FRANKLIN AND HUNTINGDON.

Horatio G. Fisher, R., Huntingdon, Huntingdon county.

XXXIV—CLINTON, CLEARFIELD AND CENTRE.

S. R. Peale, D., Lock Haven, Clinton county.

XXXV—BLAIR AND CAMBRIA.

John A. Lemon, R., Hollidaysburg, Blair county.

XXXVI—SOMERSET, BEDFORD AND FULTON.

E. D. Yutzy, R., Ursina, Somerset county.

XXXVII—INDIANA AND JEFFERSON.

Thomas St. Clair, R., Indiana, Indiana county.

XXXVIII—CAMERON, ELK, CLARION AND SOMERSET.

William L. Corbett, D., Clarion, Clarion county.

XXXIX—WESTMORELAND.

James C. Clarke, D., Greensburg.

XL—FAYETTE AND GREENE.

James W. Hays, D., Harvey's, Greene county.

XLI—BUTLER AND ARMSTRONG.

John M. Greer, R., Butler, Butler county.

XLII—ALLEGHENY.

Hugh M'Neill, R., Allegheny City.

XLIII—ALLEGHENY.

Joseph M. Gazzam, R., Pittsburgh.

XLIV—ALLEGHENY.

Jno. C. Newmyer, R., 127 Fifth Avenue, Pittsburgh.

XLV—ALLEGHENY.

John Gilfillan, R., Upper St. Clair.

XLVI—BEAVER AND WASHINGTON.

George V. Lawrence, R., Monongahela City, Washington.

XLVII—LAWRENCE AND MERCER.

Geo. W. Wright, R., Mercer, Mercer county.

XLVIII—WARREN AND VENANGO.

Chas. W. Stone, R., Warren, Warren county.

XLIX—ERIE.

Henry Butterfield, R., Erie.

L—CRAWFORD.

John Fertig, D., Titusville.

Republicans	31
Democrats	18
Independent Democrat	1

OFFICERS OF THE SENATE.

President—John Latta, Greensburg.
President pro tem.—John C. Newmyer, 127 Fifth ave., Pittsburgh.
Chief Clerk—Thos. B. Cochran, Lancaster.
Journal Clerk—Lucius Rogers, Smethport, M'Kean county.
Reading Clerk—E. W. Smiley, Franklin, Venango county.
Message Clerk—George Pearson, Mercer county.
Transcribing Clerks—B. F. Butterfield, Erie county.
S. A. Smith, Indiana county.
Librarian—Sullivan S. Child, Dauphin county.
Sergeant-at-Arms—Jeremiah Cromer, Fulton county.
Door-keeper—J. J. Long, Washington county.
Messenger—E. A. Coryell, Philadelphia.
Postmaster—G. W. Leatherberry, Philadelphia.

SENATE STANDING COMMITTEES, 1877.

Constitutional Reform—Messrs. Lawrence, Jones, Mylin, Grady, Reyburn, Allen, Ermentrout, Corbett and Holben.

Federal Relations—Messrs. Jones, Yutzy, Wright, Keefer, Everhart, Allen, Peale and Newmyer, Pr. *pro tem.*

Finance—Messrs. M'Neill, Lawrence, Jones, Yutzy, Smith, Herr, Roebuck, Dill, Nagle, Yerkes and Clarke.

Judiciary, (General)—Messrs. Herr, Jones, Davies, Stone, Greer, Gazzam, Yerkes, Allen, Dill, Ermentrout, Burnett and Newmyer, Pr. *pro tem.*

Judiciary, (Local)—Messrs. Butterfield, Mylin, Reyburn, Grady, Peale, Corbett and Holben.

Banks—Messrs. Fisher, Newell, Gazzam, Everhart, Clarke, Torbert and Crawford.

Education—Messrs. Roebuck, St. Clair, Butterfield, Wright, Clarke, Nagle and Hawley.

Accounts—Messrs. Lemon, Fisher, Reyburn, Seamans, Chesnut, Hays and Detwiler.

Pensions and Gratuities—Messrs. Seymour, Newell, Keefer, Gazzam, Bussey, Holben and Hays.

Corporations—Messrs. Yutzy, Keefer, Gilfillan, Seamans, Burnett, Nagle and Detwiler.

Mines and Mining.—Messrs. Greer, Lawrence, Wadhams, M'Neill, Seymour, Torbert and Holben.

Public Printing.—Messrs. Keefer, Dunkel, Cooper, M'Neill, Chesnut, Hawley and Engelman.

Railroads.—Messrs. Cooper, Lemon, Lamon, Yutzy, Dunkel, Dill and Crawford.

Retrenchment and Reform.—Messrs. St. Clair, Seymour, Fisher, Wright, Peale, Hawley, Burnett and Newmyer, Pr. *pro tem.*

Canals and Inland Navigation.—Messrs. Wadhams, Newell, Meily, Grady, Yerkes, Peale and Crawford.

Agriculture.—Messrs. Gillfillan, Lemon, Lawrence, Meily, Chesnut Engelman and Detweiler.

Military Affairs.—Messrs. Dunkel, Butterfield, Meily, Mylin, Bussey, Corbett and Detweiler.

Library.—Messrs. Reyburn, Everhart, Herr, Roebuck, Ermentrout, Engelman and Corbett.

Vice and Immorality.—Messrs. Wright, Everhart, St. Clair, Wadhams, Butterfield, Clarke and Chestnut.

Public Buildings.—Messrs. Meily, Grady, Herr, Wadhams, Bussey, Torbert and Hays.

New Counties and County Seats.—Messrs. Stone, Lamon, Davies, Seamans, Allen, Fertig and Hawley.

Compare Bills.—Messrs. Mylin, Cooper, Greer, Gilfillan, Stone, Bussey and Fertig.

Municipal Affairs.—Messrs. Lamon, Gazzam, Newell, Smith, Ermentrout, Nagle and Fertig.

Centennial Affairs.—Messrs. Smith, Davies, Lemon, Lamon, Cooper, Dill and Burnett.

MEMBERS OF THE HOUSE OF REPRESENTATIVES.

PHILADELPHIA.

First district, 1st ward—Wm. S. Douglass, R., 523 Moore street.
Wm. Graham, R., 1522 South Ninth street.
Second district, 2d ward—John Holland, D., 1016 Carpenter street.
Richard H. Lodge, D., 1103 South Tenth street.
Third district, 3d ward—James L. Marshall, D , 734 Passyunk ave.
Fourth district, 4th ward—James J. Monaghan, D., 708 South Sixth street.
Fifth district, 5th ward—Emile J. Petroff, R., 520 South Fourth street.
Sixth district, 6th ward—Hugh Mackin, D., 523 Race street.
Seventh district, 7th ward—Wm. H. Patterson, R., 1901 South street.
Wm. J. Donaldson, R., 508 South Twelfth street.
Eighth district, 8th ward—Harry H. Shantz, R., 1004 Chestnut street.
Ninth district, 9th ward—John Cunningham, R., 9 North Nineteenth street.
Tenth district, 10th ward—Geo. W. Hall, R., 1131 Arch street.
Eleventh district, 11th ward—Albert Crawford, D., 131 Noble street.
Twelfth district, 12th ward—Chas. R. Gentner, D., 314 Brown street.
Thirteenth district, 13th ward—John H. Kennedy, R., 816 Poplar street.

Fourteenth district, 14th ward—James Devereux, R., 1002 Nectarine street.
Fifteenth district, 15th ward—Henry Huhn, R , 802 North Sixteenth street.
Geo. W. Buckman, R., 1729 Fairmount ave.
James Bigger, R., 2517 Hamilton street.

Sixteenth district, 16th ward—Abram Jacoby, R., 328 George street.
Seventeenth district, the 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th and 14th divisions of the 17th ward—John E. Faunce, D., 1225 North Fifth street.
Eighteenth district, the 1st, 2d, 3d and 4th divisions of the 17th and 18th wards—Geo. A. Bakeoven, R., 829 East Girard ave.
Josiah N. Kochersperger, R., 440 East Girard ave.
Nineteenth district, 19th ward—Wm. Ringgold, R., 2117 North Fifth street.
Robt. Gillespie, R., 2448 Kensington avenue.
J. B. M'Cleary, R., 324 Moore street, 31st ward.
Twentieth district, 20th ward—Harry M. Quirk, R., 1239 Stiles street.
Francis A. Osbourn, R., 1315 Jefferson street.
Twenty-first district; 21st and 28th wards—Josephus Yeakel, R., Manayunk, Philadelphia.
Twenty-second district, 22d ward—Jos. M. Hill, R., Adams ab. Rittenhouse street.
Twenty-third district, 23d ward—Chas. B. Salter, R., Frankford.
Twenty-fourth district, 24th ward—James Newell, R., 606 Preston street.
Twenty-fifth district, 25th ward—Geo. L. Pallatt, D., 3255 York avenue, Rising Sun P. O.
Twenty-sixth district, 26th ward—Harry O'Neill, R., 2015 Catharine street.
Joseph R. Souder, R., 1314 S. Tenth street.
Twenty-seventh district, 27th ward—John W. Leigh, R., 3801 Spruce street.
Twenty-eighth district, 29th ward—Alfred C. Neall, R., 2228 Bolton street.

ADAMS.

Wm. A. Martin, D., Arendtsville.
Wm. J. M'Clure, D., New Oxford.

ALLEGHENY.

First district—Henry M. Long, R., Allegheny City.
Wm. H. Graham, R., Allegheny City.
Jas. D. Walker, R., Allegheny City.
Second district—Robert S. Frazer, R., 61 Grand street, Pittsburgh.
Wm. J. Flinn, R., 421 Fifth avenue, Pittsburgh.
Third district—Peter Zern, D., 400 Penn avenue, Pittsburgh.

Fourth district—Joseph Mitchell, R , Pittsburgh.
Samuel M'Elroy, Jr., R., 16th ward, Pittsburgh.
Adam H. Weaver, R., 36th ward, Pittsburgh.
J. Martin Schafer, R., 32 Eleventh street, South Side, Pittsburgh.
Fifth district—Joseph A. Stone, R., Pittsburgh.
William H. Magill, R., Rural Ridge.
Sixth district—Vincent Miller, R., M'Donald Station, Washington county.
William Hill, R., Mansfield Valley, Allegheny county.

ARMSTRONG.

Andrew W. Bell, R., Brady's Bend.
Wm. G. Heiner, R., Kittanning.

BEAVER.

John Caughey, R., Beaver.
Gilbert L. Eberhart, R., New Brighton.

BEDFORD.

Geo. H. Spang, D., Bedford.
Wm. P. Schell, D., Bedford.

BERKS.

First district—Jacob Miller, D., 817 Franklin street, Reading.
Jeremiah H. Boone, R., Reading.
Second district—Nicholas Andre, D., Colebrookdale.
Joseph B. Conrad, D., Bernville.
Geo. D. Schaeffer, D., Fleetwood.
Stephen J. Smith, D., Hamburg.

BLAIR.

David M. Jones, R., Tyrone.
Daniel Shock, R., Claysburg, Sarah P. O.

BRADFORD.

E. Reed Myer, R., Myersburg.
James Foster, R., Towanda.
John F. Gillett, R., Gillett's Station.

BUCKS.

James W. Carver, D., Erwinna.
Legrand Leaw, D., Attleborough.
Hiram Scarborough, D., New Hope.
Henry C. Moore, D., Sellersville.

BUTLER.

R. A. Mifflin, R., North Hope.
Wm. Irvine, R., Breakneck.

CAMBRIA.

John Downey, D., Johnstown.
James J. Thomas, D., Carrolltown.

CAMERON.

John Brooks, R., Sinnemahoning.

CARBON.

J. C. Kramer, D., Mauch Chunk.
Wm. M. Rapsher, R., Lehighton.

CENTRE.

Wm. K. Alexander, D., Millheim Centre.
James F. Weaver, D., Milesburg.

CHESTER.

Samuel Butler, R., Lionville.
Wm. T. Fulton, R., Oxford.
Jesse Matlack, R., Milltown.
John P. Edge, R., Downingtown.

CLARION.

Joseph A. Summerville, D., New Athens.
Marcus L. Lockwood, D , St. Petersburg.

CLEARFIELD.

Aaron C. Tate, D., Clearfield.

CLINTON.

A. J. Quigley, D., Youngwomanstown.

COLUMBIA.

E. J. M'Henry, D., Stillwater.
D. S. Brown, D., Mainville.

CRAWFORD.

S. H. Findley, R., Atlantic.
W. B. Roberts, R., Titusville.
C. W. Tyler, R., Meadville.
O. O. Potter, R., Mosiertown.

CUMBERLAND.

Samuel A. Bowers, D., Carlisle.
Samuel W. Means, D., Shippensburg.

DAUPHIN.

First district—Andrew K. Black, R., Harrisburg.
Second district—Joseph H. Nisley, R., Middletown.
Anton F. Engelbert, D., Wiconisco.

DELAWARE.

O. F. Bullard, R., Media.
Y. S. Walter, R , Chester.

ELK.

Chas. R. Earley, D , Ridgway.

ERIE.

First district—Wm. Henry, D., Erie.
Second district—S. F. Chapin, R., Wattsburg.
S. E. Kincaid, R., Wayne.
C. A. Hitchcock, R., North-East.

FAYETTE.

Thos. B. Schnatterly, D., Uniontown.
R. M. Hill, D., Farmington.

FOREST.

S. H. Haslett, D., Tionesta.

FRANKLIN.

Hastings Gehr, R , Chambersburg.
Wm. Burgess, R., Richmond Furnace.
H. C. Greenawalt, R., Fayetteville.

FULTON.

Robert I. Hunter, D., New Grenada.

GREENE.

Morgan R. Wise, D , Waynesburg.

HUNTINGDON.

Alex. Port, R., Huntingdon.
Percival P. Dewees, R., Orbisonia.

INDIANA.

Jacob Creps, R., Indiana.
A. H. Fulton, R., West Lebanon.

JEFFERSON.

James U. Gillespie, D., Punxsutawny.

JUNIATA.

T. D. Garman, D , Patterson.

LANCASTER.

First district—Jacob L. Steinmetz, D., Lancaster.
Second district—Wm. M'Gowan, R., Christiana.
Hiram Peoples, R., New Providence.
Third district—J. A. Stober, R., Schoeneck.
Geo. H. Ettla, R., Marietta.
Dr. C. J. Snavely, R., Manheim.

LAWRENCE.

E. S. N. Morgan, R., New Castle.
John Q. Stewart, R., Enon Valley.

LEBANON.

J. Henry Miller, R., Lebanon.
F. M. Bachman, R., Fredericksburg,

LEHIGH.

Geo. T. Gross, D., Allentown.
F. B. Heller, D., Coopersburg.
Ernest Nakel, D., Catasauqua.

LYCOMING.

John Gaffey, D., Williamsport.
Nathan B. Kimble, D., Williamsport.
A. H. Hill, D., Hughesville.

LUZERNE.

First district—Chas. A. Miner, R., Wilkesbarre.
Second district—John B. Smith, R., Kingston.
Third district—J. J. Shonk, R., Plymouth.
Fourth district—Chas. M'Carron, D., Hazleton.
Fifth district—George Judge, D., Pittston.
Sixth district—James O. Kiersted, R., Scranton.
D. M. Jones, R., Hyde Park.
Seventh district—A. I. Ackerley, R., Clark's Green.
Eighth district—S. S. Jones, R., Carbondale.

M'KEAN.

C. H. Foster, R., Bradford.

MERCER.

Edwin W. Jackson, R., Mercer.
T. M. Rezner, R., Greenville.
Andrew G. Spears, R., Hermitage.

MIFFLIN.

E. H. H. Stackpole, R., M'Veytown.

MONROE.

A. J. Shoemaker, I. D., Shoemaker's.

MONTGOMERY.

Montgomery S. Longaker, D., Pottstown.
F. M. Knipe, D., Frederick.
John C. Richardson, D., Bridgeport.
James B. Law, D., Ardmore.
Edwin Hallowell, D., Willow Grove.

MONTOUR.

James M'Cormick, D., Danville.

NORTHAMPTON.

Robt. E. James, D., Easton.
Amos J. Harris, D., Hellertown.
Hiram B. Fish, D., Bath.

NORTHUMBERLAND.

Jeremiah Snyder, D., Sunbury.
Daniel L. Sherwood, D., Northumberland.

PERRY.

David H. Sheibley, D., Landisburg.

PIKE.

Lafayette Westbrook, D., Blooming Grove.

POTTER.

D. C. Larrabee, R., Coudersport.

SCHUYLKILL.

First district—John W. Morgan, R., Shenandoah.
Second district—David J. M'Kibben, D., Ashland.
Third district—Willoughby C. Felthoff, D., Tamaqua.
Fourth district—John M. Kauffman, R., Auburn.
Decius H. Wilcox, R., Llewellyn.
W. Ramsey Potts, R., Pottsville.

SNYDER.

Chas. Miller, R., Salem.

SOMERSET.

Emanuel J. Meyers, R., Berlin.
Allen S. Will, R., Glade.

SULLIVAN.

B. Rush Jackson, D., Dushore.

SUSQUEHANNA.

Monroe J. Larrabee, R., Susquehanna.
Eben P. Hines, R., Friendsville.

TIOGA.

*Hugh Young, R., Wellsboro'.
C. V. Elliott, R., Mansfield.

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* Resigned May, 1877.

UNION.

Alfred Hayes, R., Lewisburg.

VENANGO.

J. M. Dickey, R., Franklin.
Wm. Gates, R., Rockland.
Geo. E. Mapes, R., Pleasantville.

WARREN.

W. M. Lindsey, R., Warren.

WASHINGTON.

James K. Billingsley, R., California.
John S. Duncan, R., Cross Creek Village.
Joseph R. M'Lain, R., Claysville.

WAYNE.

Almeron R. Howe, D., Honesdale.
Wm. M. Nelson, D., Equinunk.

WESTMORELAND.

W. J. K. Kline, D., Greensburg.
John Hugus, D., Delmont.
Wm. Donnelly, D., Millwood.

WYOMING.

John Jackson, D., Osterhout.

YORK.

Adam Stevens, D., Etters.
John B. Gemmill, D., New Park.
Philip S. Bowman, D., Hanover.
Geo. E. Sherwood, D., York.

Republicans	119
Democrats	81
Independent Democrat	1

OFFICERS OF THE HOUSE OF REPRESENTATIVES.

Speaker—E. Reed Myer, Myersburg, Bradford county.
Chief Clerk—Wm. C. Shurlock, Beaver Falls, Beaver county.
Resident Clerk—John A. Smull, Harrisburg, Dauphin county.
Reading Clerk—W. H. Bradley, Danville, Montour county.
Journal Clerk—J. E. Allen, Harrisburg, Dauphin county.
Message Clerk—L. G. Linn, Butler, Butler county.
Transcribing Clerks—S. L. Wilson, Washington, Washington county.
Milo R. Adams, Garret, Somerset county.
Postmaster—P. W. Raymond, Franklin, Venango county.

Sergeant-at-Arms—Oscar F. Gaines, Pittston, Luzerne county.
Door-keeper—D. W. Aiken, New Castle, Lawrence county.
Messenger—A. B. Vance, Philadelphia.

STANDING COMMITTEES OF THE HOUSE OF REPRESENTATIVES—1877-8.

Constitutional Reform—Messrs. Hall, Morgan, (Lawrence,) Osborn, Edge, Frazer, Walker, Eberhart, Mifflin, Rapsher, Fulton, (Chester,) Tyler, Nisley, Walter, Miller, (Lebanon,) Larrabee, (Susquehanna,) Sherwood, (Northumberland,) Schell, Stevens, Thomas, Smith, (Berks,) Longaker, Kramer, Knipe and Fish.

Ways and Means—Messrs. Huhn, Chapin, Miner, Newell, Patterson, Bell, Hall, Potter, Larrabee, (Potter,) Stober, Butler, Potts, Jones, D. M., (Blair,) Weaver, (Allegheny,) Yeakel, Gross, Crawford, Schell, Sherwood, (Northumberland,) Gentner, Donnelly, Stevens, Marshall and Law, (Montgomery.)

Appropriations—Messrs. Long, Leigh, Morgan, (Lawrence,) Billingsley, Souder, Douglass, Caughey, Ettla, Ackerly, Heiner, Salter, Shonk, Elliot, Roberts, Hitchcock, Spang, Richardson, Westbrook, Earley, Englebert, Law, (Montgomery,) Nelson, Jackson (Sullivan) and Jackson, (Wyoming.)

Judiciary, (General)—Messrs. Jackson, Hall, Bullard, Gehr, Larrabee, (Susquehanna,) Larrabee, (Potter,) Frazer, Hayes, Tyler, Eberhart, Lindsay, Osbourn, Rapsher, Potts, Billingsley, Spang, Faunce, James, Schnatterly, Schell, Sherwood, (Northumberland,) Snyder and Steinmetz.

Judiciary, (Local)—Messrs. Gehr, Stober, Lindsay, Hayes, Donaldson, Jackson, (Mercer,) Rapsher, Chapin, Hill, (Allegheny,) Hitchcock, Bullard, Fulton, (Chester,) Larrabee, (Potter,) Newell, Neall, Faunce, Schell, Spang, Sherwood, (Northumberland,) James, Stevens, Marshall, Leaw, (Bucks,) Schnatterly and Steinmetz.

Municipal Corporations—Messrs. Ringgold, Leigh, Jones, D. M., (Luzerne,) Potts, Frazer, Schafer, (Allegheny,) Walker, Souder, Donaldson, Petroff, Devereux, Flinn, M'Cleary, Boone, Black, Jacoby, Faunce, Holland, Henry, Crawford, Mackin, Gentner, Zern, Gaffy and Sherwood, (York.)

Mines and Mining—Messrs. Billingsley, Stone, Minor, Shock, Spears, M'Elroy, M'Lain, Bell, Gillett, Peoples, Elliott, Miller, (Allegheny,) Miller, (Lebanon,) Wilcox, Shonk, Zern, Pallatt, Engelbert, Hugus, Westbrook, Kline, Howe, Snyder and M'Carron.

Geological Survey—Messrs. Edge, Dickey, Huhn, Foster, (M'Kean,) Burgess, Hall, Miner, Morgan, (Schuylkill,) Stewart, Yeakel, Young, Hines, Ettla, M'Elroy, Weaver, (Allegheny,) Carver, M'Henry, Knipe, Hugus, Holland, Hill, (Fayette,) Gaffey, Hill, (Lycoming,) Downey and M'Clure.

Labor and Industry—Messrs. Morgan, (Schuylkill,) Boone, Gates, Duncan, Will, Spears, Bachman, Hill, (Allegheny,) Cunningham, Snavely, Creps, Matlack, Smith, (Luzerne,) Hines, Tate, Donnelly, Sherwood, (York,) Judge, Hallowell, Nakel, Garman, Gillespie (Jefferson) and Kramer.

Education—Messrs. Stewart, Mitchell, Hitchcock, Elliott, Fulton, (Indiana,) M'Lain, Port, Edge, Greenawalt, Larrabee, (Potter,) Shock, Miller, (Lebanon,) Roberts, Caughey, Jones, D. M., (Blair,) Leaw, (Bucks,) Law, (Montgomery,) Sheibley, Garman, Jackson, (Sullivan,) Earley, Kline, Schnatterly and Howe.

Centennial—Messrs. Douglass, Newell, Quirk, Petroff, Patterson, O'Neill, Gillespie, Neall, Salter, Stone, Weaver, (Allegheny,) Will, Irwin, Port, Peoples, Wise, Martin, Lockwood, Kramer, Miller, (Berks,) Kimble, James, Mackin and Brown.

Insurance—Messrs. Stober, Quirk, Young, Walter, Stackpole, Potts, Ettla, Spears, Buckman, Butler, Smith, (Luzerne,) Miller, (Snyder,) Miller, (Lebanon,) Mifflin, Fulton, (Indiana,) M'Lain, M'Henry, Alexander, Bowman, M'Kibbin, Gillespie, (Jefferson,) M'Clure, Hill, (Lycoming,) Nakel and Thomas.

Manufacturing—Messrs. Newell, Rezner, Foster, (M'Kean,) Fulton, (Chester,) Hill, (Philadelphia,) Jacoby, Kiersted, Kincaid, Mapes, Meyers, Miller, (Allegheny,) Port, Snavely, Stone, Shantz, Weaver, (Centre,) Summerville, Haslett, Snyder, Richardson, Monaghan, Hunter, Felthoff and Garman.

Accounts and Expenditures—Messrs. Ettla, Bakeoven, Fulton, (Chester,) Stewart, M'Clecry, Salter, Elliott, Foster, (M'Kean,) Creps, Buckman, Chapin, Bachman, Stone, Shock, Kochersperger, Richardson, Downey, Hallowell, Lockwood, Judge, Lodge, Longaker, Mackin and Martin.

Vice and Immorality—Messrs. Findlay, Hill, (Philadelphia,) Neall, Schafer, (Allegheny,) Miller, (Allegheny,) Morgan, (Lawrence,) Duncan, Mapes, Nisley, Peoples, Port, Gillett, Fulton, (Indiana,) Irvine, Matlack, Crawford, Monaghan, Judge, Gentner, Shoemaker, Henry, Means, Haslett and M'Cormick.

Pensions and Gratuities—Messrs. Chapin, Graham, (Allegheny,) Gates, Bakeoven, Hines, Jones, D. M. (Luzerne,) Mapes, M'Lain, Osbourn, Ringgold, Walter, Snavely, Shantz, M'Henry, M'Cormick, Knipe, Nakle, Tate and Wise.

Military—Messrs. Graham, (Allegheny,) Bakeoven, Quirk, Walker, Billingsley, Ringgold, Jones, D. M., (Luzerne,) Jones, D. M., (Blair,) Bigger, Shantz, Bachman, Irvine, Will, Wilcox, Young, Gemmill, Garman, Fish, Bowers, Felthoff, Hallowell, Lodge, Gillespie (Jefferson) and Scarborough.

Elections—Messrs. Miner, Potter, Bigger, M'Cleary, Kochersperger, Graham, (Allegheny,) Gehr, Huhn, Bullard, Hayes, Rapsher, Matlack, M'Elroy, M'Gowan, Stackpole, Jacoby, Hunter, Hill, (Lycoming,) M'Carron, Shoemaker, Longaker, James, M'Cormick and Sheibley.

Banks—Messrs. Chapin, Findlay, Donaldson, Dickey, Jones, S. S., (Luzerne,) Hill, (Allegheny,) Cunningham, Butler, Burgess, Jackson, (Mercer) Kincaid, Kiersted, Kaufman, Mapes, Matlack, Meyers, Gross, Alexander, Knipe, Leaw, (Bucks,) Miller, (Berks,) Pallatt, Gemmill, Wise and Andre.

Corporations—Messrs. Leigh, Hayes, Rezner, Roberts, Stober, Foster, (Bradford,) Long, Gillespie, (Philadelphia,) Buckman, Patterson, Mitchell, Heiner, Hines, Jones, S. S., (Luzerne,) Bachman, Dewees, Young, Henry, Holland, Alexander, Monaghan, Gaffey, Zern, Conrad and Kimble.

Counties and Townships—Messrs. Dickey, Leigh, Morgan, (Schuylkill,) Roberts, Hitchcock, Lindsay, Devereux, Tyler, Eberhart, Meyers, Kiersted, Gillespie, (Philadelphia,) Foster, (Bradford,) Hines, Creps, Crawford, Bowers, Earley, Kimble, Weaver, (Centre,) Gross, Snyder, Hunter and Donnelly.

Compare Bills—Messrs. Buckman, Ringgold, Graham, (Philadelphia,) Flinn, Yeakel, Douglass, Jones, S. S., (Luzerne,) Donaldson, Cunningham, Rezner, Young, Will, Bigger, M'Elroy, Jones, D. M., (Blair,) M'Clure, Steinmetz, M'Cormick, Sherwood, (York,) Schaffer, (Berks,) Conrad, Scarborough, M'Kibbin, M'Carron and Heller.

Library—Messrs. Gillespie, (Philadelphia,) Graham, (Allegheny,) Stewart, O'Neill, Bakeoven, Nisley, M'Gowan, Gillett, Hill, (Philadelphia,) Magill, Eberhart, Gates, Miller, (Allegheny,) Brooks, Schnatterly, Fish, Jackson, (Wyoming,) Quigley, Wise, Summerville, Weaver, (Centre,) Andre and Carver.

Agriculture.—Messrs. M'Gowan, Edge, Smith, (Luzerne,) Gates, Kincaid, Magill, Creps, Duncan, Gillett, Potter, Ackerly, Stackpole, Snavely, M'Lain, Miller, (Allegheny,) Carver, Tate, Bowman, Brown, Harris, Lockwood, Martin, Schaeffer, (Berks,) Moore and Alexander.

Railroads—Messrs. Nisley, Souder, Morgan, (Lawrence,) Ettla, Salter, Newell, Kaufman, Walter, Jacoby, Duncan, Foster, (Bradford,) Heiner, Jones S. S., (Luzerne,) Larrabee, (Susquehanna,) Dewees, Westbrook, Engelbert, Hugus, Earley, Bowers, Jackson, (Sullivan,) Donnelly, Howe, Scarborough and Carver.

City Passenger Railways—Messrs. O'Neill, Petroff, Douglass, Kochersperger, Morgan, (Schuylkill,) Devereux, Quirk, Bakeoven, Gillespie, (Philadelphia,) Schafer, (Allegheny,) Mitchell, Miner, Black, M'Gowan, Neall, Pallatt, Gentner, Marshall, Lodge, Miller, (Berks,) James, Heller, Kimble and Holland.

Iron and Coal—Messrs. Bell, Shonk, Shock, Boone, Dewees, Foster, (M'Kean,) Greenawalt, Jones, D. M., (Luzerne,) Kaufman, Flinn, Magill, Mifflin, Wilcox, Bigger, Spears, Richardson, Holland, Tate, Zern, Smith, (Berks,) Quigley, Law (Montgomery) and M'Kibbin.

Printing—Messrs. Yeakel, Walter, Fulton, (Indiana,) Petroff, Bell, Graham, (Philadelphia,) Greenawalt, Eberhart, Miller, (Snyder,) Kennedy, Kline, Gemmill, Means, Mackin, Sherwood, (York,) Gross and Garman.

Public Buildings—Messrs. Quirk, Findlay, Black, Jacoby, Hill, (Allegheny,) Heiner, Miller, (Snyder,) Graham, (Philadelphia,) Kennedy, Kochersperger, Conrad, Somerville, Thomas, Quigley, Schaffer (Berks) and Harris.

Federal Relations—Messrs. Morgan, (Lawrence,) Boone, Burgess, Bullard, Eberhart, Gehr, Jackson, (Mercer,) Larrabee, (Susquehanna,) Mitchell, Osbourn, Tyler, Kaufman, Kennedy, Buckman, Law, (Montgomery,) Stevens, Marshall, Nelson, Jackson, (Wyoming,) Nakel, Shoemaker, Earley and Gemmill.

Retrenchment and Reform—Messrs. Patterson, Graham, (Philadelphia,) Kennedy, Miller, (Snyder,) Stackpole, Shantz, Rezner, Hill, (Philadelphia,) Magill, Kiersted, Irvine, Gates, Burgess, Smith, (Luzerne,) Gaffy, Andre, Downey, Brown, Felthoff, Gross, Moore, Heller and Hill (Fayette.)

Bureau of Statistics—Messrs. Shonk, Huhn, Leigh, Dickey, Caughey, Dewees, Fulton, (Chester,) Greenawalt, Shantz, Walker, Meyers, Wilcox, Weaver, (Allegheny,) Gillett, Kincaid, Spang, M'Henry, Andre, Means, Moore, Shoemaker, Sheibley and Bowman.

ORGANIZATION OF COUNTIES.

Names and date, day, month and year of the erection of the several counties of the Commonwealth of Pennsylvania, and the territory from which they were formed; the three first counties which were formed, to wit: Philadelphia, Bucks and Chester, were established at the first settlement of the Province of Pennsylvania, and formed the only original counties of all that territory of which the now great State is formed, comprised of sixty-six counties, as follows, viz.:

1. Adams, January 23, 1800, formed of a part of York.
2. Allegheny, September 24, 1788, formed of a part of Westmoreland and Washington.
3. Armstrong, March 12, 1800, formed of a part of Allegheny, Westmoreland and Lycoming.
4. Beaver, March 12, 1800, formed of a part of Allegheny and Washington.
5. Bedford, March 9, 1771, formed of a part of Cumberland.
6. Berks, March 11, 1752, formed of a part of Philadelphia, Chester and Lancaster.
7. Blair, February 26, 1846, formed of a part of Huntingdon and Bedford.
8. Bradford, February 21, 1810, formed of a part of Luzerne and Lycoming.*
9. Bucks, one of the original counties of the Province, 1682.†
10. Butler, March 12, 1800, formed of a part of Allegheny.
11. Cambria, March 25, 1804, formed of a part of Huntingdon, Somerset and Bedford.
12. Cameron, March 29, 1860, formed of a part of Clinton, Elk, M'Kean and Potter.
13. Carbon, March 13, 1843, formed of a part of Northampton and Monroe.
14. Centre, February 13, 1800, formed of a part of Mifflin, Northumberland, Lycoming and Huntingdon.
15. Chester, one of the original counties established at the first settlement of the Province, 1682.
16. Clarion, March 11, 1839, formed of a part of Venango and Armstrong.
17. Clearfield, March 26, 1804, formed of a part of Lycoming and Northumberland.

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*Previous to March 24, 1812, this county was called Ontario, but its name was changed to Bradford, on that day.

†Bucks county was one of the three original counties established at the first settlement of the Province of Pennsylvania; the other two being Philadelphia and Chester.—*See Votes of the Assembly, Vol. 1.*

18. Clinton, June 21, 1839, formed of a part of Lycoming and Centre.
19. Columbia, March 22, 1813, formed of a part of Northumberland.
20. Crawford, March 12, 1800, formed of a part of Allegheny.
21. Cumberland, January 27, 1750, formed of a part of Lancaster.
22. Dauphin, March 4, 1785, formed of a part of Lancaster.
23. Delaware, September 26, 1789, formed of a part of Chester.
24. Elk, April 18, 1843, formed of a part of Jefferson, Clearfield and M'Kean.
25. Erie, March 12, 1800, formed of a part of Allegheny.
26. Fayette, September 26, 1783, formed of a part of Westmoreland.
27. Forest, April 11, 1848, formed of a part of Jefferson and Venango.*
28. Franklin, September 9, 1784, formed of a part of Cumberland.
29. Fulton, April 19, 1850, formed of a part of Bedford.
30. Greene, February 9, 1796, formed of a part of Washington.
31. Huntingdon, September 20, 1787, formed of a part of Bedford.
32. Indiana, March 30, 1803, formed of a part of Westmoreland and Lycoming.
33. Jefferson, March 26, 1804, formed of a part of Lycoming.
34. Juniata, March 2, 1831, formed of a part of Mifflin.
35. Lancaster, May 10, 1729, formed of a part of Chester.
36. Lawrence, March 28, 1849, formed of a part of Beaver and Mercer.
37. Lebanon, February 16, 1813, formed of a part of Dauphin and Lancaster.
38. Lehigh, March 6, 1812, formed of a part of Northampton.
39. Luzerne, September 25, 1786, formed of a part of Northumberland.
40. Lycoming, April 13, 1795, formed of a part of Northumberland.
41. M'Kean, March 26, 1804, formed of a part of Lycoming.
42. Mercer, March 12, 1800, formed of a part of Allegheny.
43. Mifflin, September 19, 1789, formed of a part of Cumberland and Northumberland.
44. Monroe, April 1, 1836, formed of a part of Northampton and Pike.
45. Montgomery, September 10, 1784, formed of a part of Philadelphia.
46. Montour, May 3, 1850, formed of a part of Columbia.
47. Northampton, March 11, 1752, formed of a part of Bucks.
48. Northumberland, March 21, 1772, formed of parts of Lancaster, Cumberland, Berks, Bedford and Northampton.
49. Perry, March 22, 1820, formed of a part of Cumberland.
50. Philadelphia, one of the original counties established at the first settlement of the Province, 1682.
51. Pike, March 26, 1814, formed of a part of Wayne.
52. Potter, March 26, 1804, formed of a part of Lycoming.

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*Part of Venango added by act approved October 31, 1866.

53. Schuylkill, March 1, 1811, formed from a part of Berks and Northampton.
54. Snyder, March 2, 1855, formed from a part of Union.
55. Somerset, April 17, 1795, formed from a part of Bedford.
56. Sullivan, March 15, 1847, formed from a part of Lycoming.
57. Susquehanna, February 21, 1810, formed from a part of Luzerne.
58. Tioga, March 26, 1804, formed from a part of Lycoming.
59. Union, March 22, 1813, formed from a part of Northumberland.
60. Venango, March 12, 1800, formed from a part of Allegheny and Lycoming.
61. Warren, March 12, 1800, formed from a part of Allegheny and Lycoming.
62. Wayne, March 21, 1798, formed from a part of Northampton.
63. Washington, March 28, 1781, formed from a part of Westmoreland.
64. Westmoreland, February 26, 1773, formed from a part of Bedford, and in 1785 part of the purchase of 1784 was added thereto.
65. Wyoming, April 4, 1842, formed from a part of Luzerne.
66. York, August 19, 1749, formed from a part of Lancaster.

COUNTIES AND COUNTY TOWNS OF PENNSYLVANIA.

DISTANCES OF COUNTY TOWNS FROM WASHINGTON AND HARRISBURG.

NAME OF COUNTY.	COUNTY TOWNS.	Distance from Washington,	Distance from Harrisburg.
		Miles.	Miles.
Adams	Gettysburg	117	69
Allegheny	Pittsburgh	375	249
Armstrong	Kittanning	373	249
Beaver	Beaver	403	277
Bedford	Bedford	203	108
Berks	Reading	157	54
Blair	Hollidaysburg	264	140
Bradford	Towanda	293	167
Bucks	Doylestown	176	142
Butler	Butler	378	252
Cambria	Ebensburg	285	159
Cameron	Emporium	319	193
Carbon	Mauch Chunk	222	119
Centre	Bellefonte	216	149
Chester	West Chester	171	80
Clarion	Clarion	406	280
Clearfield	Clearfield	285	159
Clinton	Lock Haven	246	123
Columbia	Bloomsburg	207	81
Crawford	Meadville	473	347
Cumberland	Carlisle	144	18
Dauphin	Harrisburg	126	....
Delaware	Media	156	123

COUNTY AND COUNTY TOWNS—*Continued.*

NAME OF COUNTY.	COUNTY TOWNS.	Distance from Washington,	Distance from Harrisburg.
		Miles.	Miles.
Elk	Ridgway	351	225
Erie	Erie	469	343
Fayette	Uniontown	262	322
Forest	Tionesta	353	227
Franklin	Chambersburg	147	52
Fulton	M'Connellsburg	169	74
Greene	Waynesburg	323	300
Huntingdon	Huntingdon	224	98
Indiana	Indiana	341	215
Jefferson	Brookville	327	201
Juniata	Mifflintown	175	49
Lancaster	Lancaster	123	38
Lawrence	New Castle	425	299
Lebanon	Lebanon	152	26
Lehigh	Allentown	193	90
Luzerne	Wilkesbarre	247	121
Lycoming	Williamsport	221	95
M'Kean	Smethport	388	262
Mercer	Mercer	443	317
Mifflin	Lewistown	187	61
Monroe	Stroudsburg	254	139
Montgomery	Norristown	160	96
Montour	Danville	195	69
Northampton	Easton	210	107
Northumberland	Sunbury	181	55
Perry	New Bloomfield	160	54
Philadelphia	Philadelphia	142	108
Pike	Milford	326	276
Potter	Coudersport	345	219
Schuylkill	Pottsville	192	89
Snyder	Middleburg	185	59
Somerset	Somerset	238	200
Sullivan	Laporte	237	111
Susquehanna	Montrose	305	179
Tioga	Wellsboro'	303	177
Union	Lewisburg	190	64
Venango	Franklin	435	309
Warren	Warren	403	277
Washington	Washington	298	275
Wayne	Honesdale	296	170
Westmoreland	Greensburg	344	218
Wyoming	Tunkhannock	289	163
York	York	98	28

HISTORICAL AND STATISTICAL TABLE OF THE UNITED STATES.

STATES.	When settled.	Where settled.	By whom settled.	When adopted the Constitution.	When admitted into the Union.	Square miles.	Population in 1870.
Virginia	1607	Jamestown	English	June 26, 1788		41,352	1,225,163
New York	1614	Albany	Dutch	July 26, 1788		47,156	4,382,759
Massachusetts	1620	Plymouth	English	Feb. 6, 1788		7,800	1,457,351
New Hampshire,	1624	Dover	English	June 21, 1788		9,280	318,300
New Jersey	1624	Bergen	Dutch and Danes	Dec. 18, 1787		8,320	906,096
Delaware	1627	Cape Henlopen	Swedes and Finns	Dec. 7, 1787		2,120	125,015
Connecticut	1633	Windsor	Emigrants from Massachusetts	Jan. 9, 1788		4,674	537,454
Maryland	1634	St. Mary's	English	April 28, 1788		9,356	780,894
Rhode Island	1636	Providence	Roger Williams	May 29, 1790		1,306	217,353
North Carolina	1663	Albermarle	English	Nov. 21, 1789		45,000	1,071,361
South Carolina	1670	Port Royal	English	May 23, 1788		24,500	705,606
Pennsylvania	1682	Philadelphia	English	Dec. 12, 1787		46,000	3,521,791
Georgia	1733	Savannah	English	Jan. 9, 1788		58,000	1,184,109
Florida	1565	St. Augustine	Spanish		Mar. 3, 1845	59,268	187,748
Maine	1623	Bristol	English		Mar. 16, 1820	35,000	626,915
Wisconsin	1669	Green Bay	French		May 29, 1848	53,924	1,054,670
Michigan	1670	Detroit	French		Jan. 26, 1837	56,243	1,184,059
Arkansas	1685	Arkansas Post	French		June 15, 1836	52,198	484,471
Texas	1690	St. Antonio de Bexar,	Spanish		Dec. 24, 1845	237,321	818,579
Indiana	1690	Vincennes	French		Dec. 11, 1816	33,809	1,680,637
Louisiana	1699	Iberville	French		April 8, 1812	46,431	726,915
Alabama	1711	Mobile	French		Dec. 14, 1819	50,722	996,992
Mississippi	1716	Natchez	French		Dec. 10, 1817	47,156	827,922
Illinois	1720	Kaskaskia	French		Dec. 3, 1818	55,405	2,539,891
Vermont	1725	Fort Drummer	Emigrants from Massachusetts		Mar. 4, 1791	9,056	330,551
Tennessee	1757	Fort Louden	Emigrants from North Carolina,		June 1, 1796	45,600	1,258,520
Missouri	1764	St. Louis	French		Aug. 10, 1821	67,380	1,721,295
California	1769	San Diego	Spanish		Sept. 7, 1850	158,933	560,247
Kentucky	1775	Boonesborough	Daniel Boone and associates		June 1, 1792	37,680	1,321,011
Ohio	1788	Marietta	Emigrants from New England		Nov. 29, 1802	39,964	2,665,260
Oregon	1811	Astoria	Emigrants from Eastern States		1859	95,248	90,923
Iowa	1833	Burlington	Emigrants from Eastern States		Mar. 3, 1845	55,045	1,191,792
Minnesota	1846	Saint Paul	Emigrants from Eastern States		May, 1858	83,531	439,706
Kansas	1850	Topeka	Emigrants from Eastern States		1861	81,318	364,399
West Virginia					1862	20,000	442,014
Nevada			Emigrants from Eastern States		1864	112,090	42,491
Nebraska			Emigrants from Eastern States		1867	75,995	122,993

AMERICAN WARS DURING THE PAST ONE HUNDRED YEARS.

		Length.	Cost.
1.	War of the Revolution	7 years, 1775-82..	$135,193,703
2.	Indian war in Ohio Territory	1790.	
3.	War with Barbary	1803-04..	
4.	Tecumseh Indian war	1811.	
5.	War with Great Britain	3 years, 1812-15..	107,159,003
6.	Algerine war	1815.	
7.	First Seminole ward	1817.	
8.	Black Hawk war	1832.	
9.	Second Seminole war	1845.	
10.	Mexican war	2 years, 1846-48..	66,000,000
11.	Mormon war	1856.	
12.	War of Rebellion	4 years, 1861-65..	3,000,000,000

SOME REMARKS ON CRIME—CAUSE.

BY RICHARD VAUX.

That department of social science which claims within its domain the consideration and discussion of systems of punishment for violation of laws enacted for social safety, and protection of life and property is actively engaged in its appropriate work. In Europe, more especially, public attention is directed to the subject of convict punishment. The scientists of England, France, Belgium and Italy are occupied with preparations for International Prison Congresses, and those in the United States who are colaborers with them, have contributed whatever thought and experience they possess, in aid of the enlightened and philosophic treatment of this important subject. The direction which these scientists are now giving to their studies, is to solve the problem which involves the decision as to the best system of convict punishment.

That imprisonment is not necessarily punishment for crime, however it may inflict privations on the individual is becoming, generally admitted, that is, incarceration of itself does not subject the convict to a punishment for the crime for which incarceration is adjudged as a penalty. Incarceration and punishment are not co-existing results from imprisonment. The important question involved in this problem is, what constitutes punishment for crime, and out of it arise many other equally commanding interrogatories in their relations to this subject. That it is the criminal and not the crime that is subject to penalties is undoubted. If incarceration is not necessarily punishment, then incarceration is only a condition under which punishment is to be applied. As all plans for incarceration are not alike suitable for punishment, then that plan or method which permits punishment to be best applied is most desirable. So that this problem is narrowed to the question, which plan, method or system of incarceration is the best for the administration of punishment, and what is the best punishment for convicts sentenced to the penalty of punishment for crime.

It may be stated generally, that there are but two methods of incarceration now accepted as practical for the purpose of punishment. One is known as the congregate method, or the association or congregation of prisoners while at work, and then separated at night in cells; and the other the separation of convicts from each other at all times, both at work and at night in separate cells. There are, it is true, methods which partake of each, but as they accept the characteristics of both, they are not regarded as special methods.

Both these methods have earnest advocates; so much has been written on this problem to endeavor to demonstrate which of these systems is best adapted to the punishment of convicts, that it would occupy time and be foreign to the purpose of this paper to attempt to do more than sketch the reasoning which is presented in support of these opposite plans of incarceration.

The congregate plan, with judicious classification of individual prisoners is claimed to be best, because it is in harmony with the social character of man, violates no law of his nature which commands companionship, is most productive of profit and is therefore most likely to be "self-supporting," and costs less in prison buildings and for its administration, while it affords large opportunities for the improvement of the convict in his moral character, by associate social worship, and trade education and moral teachings enabling him to learn mental and trade knowledges, and does not disqualify him from again mingling in society after his incarceration is ended. The most zealous advocate of the "*congregate*" method will admit this sets out the grounds for his support of this system.

The friends of the separate method assert that incarceration being the condition on which punishment is to be applied, it should follow the philosophy of criminal jurisprudence which separates the person charged with crime from society, tries him as an individual separated from the society he has wronged, and inflicts the penalty of incarceration because it still separates him from association with society. That as punishment is to improve, reform and restore him again to association with his fellows, it should be directed to his individual needs, as curative remedies are addressed to the individual sufferer, and that any attempt to apply those influences which tend to produce reform or improvement in the individual, must be directed to each individual as his case demands and the result of this application of punishment intended to be inflicted on the individual during his incarceration, and that it cannot be successfully administered except the convict is disassociated from all those who are like himself under punishment for crimes; and also that trade knowledge, and secular and moral teachings are more certainly effectual when received by a convict separated from others, because convict association is a resisting power against improvement, rather than an aid to its reception.

It may be further stated as at least probable, that all the influences which it is claimed are either necessary or essential for the reform, improvement or restoration of those convicted for crimes are either moral or mental.

The physical are only incidental. It is certainly most probable that the administration of these influences on individuals in classes, is less likely to reach the cases of individuals than if they were directed to each person separately and free from the consequences of association with the depraved, debased or incurably vicious. The tendency in class administration of these restoring or reforming applications, is to negative by association the larger part of the proposed or promised benefits.

While it is true, that the natural longings are for social inter-communication, it does not appear probable that convicts are in the best condition to receive the benefits of punishment during incarceration, while they are satisfying this natural longing with the companionship of either a crime class, or the elements which constitute it. Is not this separation then from the society of convicts, if it is the normal condition of our nature, part of a proper punishment for the wrongs inflicted by the individual convict on the aggregate society out of which he comes for punishment?

Therefore it is apparent that the method of punishment during incarceration of convicts becomes a most interesting problem. This method is the basis of "systems of prison discipline," and these systems are as briefly sketched, the congregate or associate system, and the separate or individual treatment system. That there is a wide difference between them is readily seen. Each system has its zealous, earnest advocates. It will require a thorough education of those who are to decide or resolve this problem in the sense of prison discipline. This education is only begun. The arguments on either side are exhaustive. The time is coming when the appropriate tribunal must consider them and determine on their relative force, but the whole subject, and all that pertains to it must be thoroughly examined The merits alone are involved. There ought to be no other question considered than that which is the best system of prison discipline for the punishment, reform, improvement and restoration of the convict, and the highest benefit to the State.

The paramount purpose of this paper is not to discuss the systems of punishment for crimes; it is rather to consider what are the causes of crimes, because the crime cause must be the predominant object in the treatment of the convict while administering the punishment. The crime causes are as different as the characteristics of the individual criminal, and surely incarceration solely, is not the universal punishment for all causes of crime. Crime cause is inherited, is the result of social influences, of education, of physical diseases, of morbid or an abnormal mental condition, of sudden impulse or temptation, and therefore the feebleness of the power to resist violations of law.

Such are the intimate relations between the triune human character, the mental, moral, and physical conditions which constitute it, that crime is a consequence of the disharmony of these conditions in their operation, or of the subordinating power of one over the others. Disobedience to law may result from this subordination, or the over-influence of either subjugating the others, and crime may come from a want of capacity to comprehend, an influence too powerful to permit the operation of comprehension, or from an entire non-comprehension of the certain consequences of the disobedience which constitutes crime. It may be said that the impulse or temptation to disobey the law and commit crime is often too robust to be resisted by the weakness which marks the co-ordinate sub-divisions of character. Yet crime is committed and is punishable, for the philosophy of the law assumes that crime is disobedience, and never investigates the non-existence of this comprehension, or the relations of these characteristics, unless they are indicated by the act, or unless the act demands their consideration. When the non-existence of the power of comprehension is demonstrated beyond question, then the mental constitution of the individual is totally diseased—comprehension is impossible. In all other cases the moral and physical conditions may be treated as only temporarily affected, but then the individual is wholly responsible, for the stolidity which produces the want of comprehension, or the power of resistance impeding an existing comprehension, are never to negative the responsibility of individuals in their social relations, or the obligations they owe to society and the State. They can only be considered when the individual is undergoing his punishment, and then they should enter into the discipline under which the punishment is administered.

This is the philosophy of crime cause in the concrete, but it only elucidates its operations on individuals, and does not describe it

One of the most difficult problems to demonstrate is the process of the cause in its controlling power over the will and the acts of those who commit crime. That crime is hereditary is now accepted as pathologically as well as physiologically determined. Dr. Harris, of New York, gives a well authenticated case of six hundred and seventy-three descendants of one female who was incorrigibly vicious, traced through five generations. [See report of Elisha Harris, M. D., corresponding secretary, New York Prison Discipline Society, 1874.]

The following facts are officially authenticated and are taken from statistics for 1875

TABLE showing singular instances of crime in families, being a record of thirty-seven convicts confined in Eastern State Penitentiary in the year 1876; also the counties, crimes, &c.

Prisoners' No...	Age...	County.	Crime.	School.	Mental condition on Admission.	Trade.	Where did your mother live when you were born?	What did your father do for a living?	What was the neighborhood your parents lived?	In what condition was your mother's health?
a 6931	22	Bucks	Larceny and burg.	Never went	Good	Unapp.	Bucks county, Pa.	Farm laborer, quarryman	Quiet and orderly	No knowl'ge.
a 8148	19	do	do do	Public	do	App. & left.	Bucks co., Pa.	Farm laborer	do do	No knowl'ge.
a 8154	29	do	do do	Never went	do	do	Bucks co., Pa.	Farm laborer, quarryman	do do	No knowl'ge.
b 7237	20	Montgomery	Robbery & larc'y,	Public	do	Unapp.	Montgomery co., Pa.	Quarryman	Good	Sickly.
b 7238	22	do	do do	do	do	do	Ireland	Farmer	do	Sickly.
c 7724	51	Cumberland	Rec'd stolen gds	(Discha'ed.	Belongs to	the Crime	Class.)			
c 7858	18	do	Burg and larceny,	Public	Good	Unapp.	York co., Pa.	Stone Mason	do	Bad.
c 7790	20	do	do do	(Discha'ed.	Belongs to	the Crime	Class.)			
d 7851	21	Dauphin	Larceny	Never went	Good	Unapp.	Montgomery co., Md.	Slave	do	Good.
d 7852	19	do	do	do	do	do	Montgomery co., Md.	Slave	do	Good.
e 7867	25	Lycoming	Robbery	Public	do	do	Berks co., Pa.	Laborer	do	Healthy.
e 7868	23	do	A. and B. to steal,	do	do	do	Jefferson co., Pa.	Laborer	Not remarkable	Healthy.
f 7676	22	Bucks	Larceny & Recv'g,	do	do	do	Montgomery co., Pa.	Shoemaker	Good	Healthy.
f 7877	19	do	do do	do	do	do	Montgomery co., Pa.	Shoemaker	do	Healthy.
g 7940	22	Bradford	Murder, 2d deg	do	do	do	Bradford co., Pa.	Farmer	do	Delicate.
g 7941	21	do	do do	do	do	do	Broom co., N. Y.	Farmer	do	Delicate.
h 8063	22	Philadelphia	Larceny	Never went	do	do	2d Master st., city	Clerk	do	Healthy.
h 8064	17	do	do	Public	do	do	Ella st., city	In U. S. Army	do	Healthy.
i 8089	39	Lycoming	Burglary	do	do	do	Norwalk, Ohio	Carpenter	Quiet	Consumptive
i 8141	41	U. S Dist. Court	Pass'g cft. money,	do	do	do	Bradford co., Pa.	Shoemaker	do	Good.
j 8105	33	Luzerne	Murder, 2d deg	do	do	do	Reading, Pa.	Worked on canal	Schuylkill and Luzerne cos.	Healthy.
j 8185	30	do	A. and B. to kill	do	do	do	Schuylkill co., Pa.	Miner	Good	Healthy.
k 8553	21	Philadelphia	Larceny	do	do	do	Lancaster city	Carpenter	Bad	Healthy.
k 8555	40	do	Recv'g stolen gds.	do	do	do	4th Catharine, city	Carpenter	Quiet	Delicate.
l 8542	22	Lycoming	Ass't and battery,	Never went	do	do	Lancaster co., Pa.	Blacksmith	do	Healthy.
l 8543	25	do	do do	do	do	do	Lancaster co., Pa.	Blacksmith	do	Healthy.
l 8544	34	do	do do	do	do	do	Lancaster co., Pa.	Blacksmith	do	Healthy.
m 5986	32	Northumberl'd	Burg. and larceny,	do	do	do	Montour co., Pa.	Laborer	Frolicing, etc	Good.
m 8283	20	do	Larceny	do	Weak	do	Northumberland co., Pa.	Miner	do	Good.
n 6970	20	Philadelphia	Bg. A & B to kill,	Private	Good	do	Cor. 10th and Locust	Guilder	Good	Delicate.
n 8295	27	do	A. and B. to kill	Public	do	do	Cor. 10th and Locust	Guilder	do	Delicate.
o 8464	25	Cumberland	Larceny & Recv'g,	do	do	do	Cumberland co., Pa.	Laborer	Quiet	Good.
o 8465	21	do	do do	do	do	do	Cumberland co., Pa.	Laborer	do	Good.
o 8466	28	do	do do	Never went	do	do	Cumberland co., Pa.	Laborer	do	Good.
o 8587	39	do	do do	Public	do	do	Cumberland co., Pa.	Laborer	do	Good.
p 7864	42	Lycoming	Larceny, etc	Never went	do	do	Canada	Stone Mason	Good	Consumptive
p 7865	48	do	do	Public	do	do	Canada	Stone Mason	do	Consumptive

Explanatory note.—In the above table, prisoners Nos. 6,931, 8,148 and 8,154, are brothers; Nos. 7,237, 7,238, are cousins; Nos. 7,724, 7,858, 7,790, brothers and son; Nos. 7,851, 7,852, are brothers; Nos. 7,867, 7,868, are brothers; Nos. 7,876, 7,877, are brothers; Nos. 7,940, 7,941, are brothers; Nos. 8,063, 8,064, are brothers; Nos. 8,089, 8,141, are brothers; Nos. 8,105, 8,185, are brothers; Nos. 8,553, 8,555, husband and wife; Nos. 8,542, 8,543, 8,544, are negresses and sisters; Nos. 5,986, 8,283, father and son; Nos. 6,970, 8,295, are brothers; Nos. 7,864, 7,865, brother and sister; Nos. 8,464, 8,465, 8,466, 8,587, are brothers, and their aggregate term of sentence is 53 years.

Individual cases of inherited crime—cause.

A, was sent to the House of Refuge when a boy. He left the refuge, and has since served *five* terms of imprisonment in Pennsylvania, and one term in New Jersey. B, his son, was sent to the House of Refuge, and has served one term of imprisonment in *Pennsylvania*, and been in prison in *Delaware* and *New Jersey*, and he is not yet 21 years of age. B^2, a nephew of A, is now under sentence for larceny.

C was convicted and sent to the State penitentary in 1852 for larceny; 1866 his son was convicted for a like crime and sent to county prison; also convicted a second time, and sent to State penitentiary. Another son of C is now in the penitentiary for larceny.

E was convicted of larceny, served out his sentence; his son was convicted of larceny, and now in prison.

F, and F^1 and F^2 were brothers, and each was convicted of horse-stealing. F was twice convicted of the same offence.

G was convicted of larceny, and served his time of sentence. G^2, his son, was convicted of rape, and sentenced for 32 years, and is now in prison.

Note.—The cases of A and C, were from Philadelphia. The cases of E, F and G, were from agricultural counties in Pennsylvania.

That physical traits are inherited, is not doubted. The resemblance between parents and their children is a fact that is not even questioned. We know that physical causes have had such influence on females during pregnancy, that the child born, has proved the effect of these influences. A lady during pregnancy felt a strange sensation on one of her limbs, she struck the part with her hand, and on examination it was found a mouse had run up the limb, and the blow given had killed it. When the child was born, there was on the limb of the child the exact figure of a mouse, and the skin covering the spot was *mouse colored.*

If there is imparted to the child by the mother during pregnancy, such consequences from physical causes, is it to be doubted that both mental and moral impressions are in like manner impressed on the child. Most children inherit mental traits from their parents, is undeniable. Music, painting, other special mental capacities are found in the children of parents who possessed them. Is the moral nature only to be utterly unimpressible? It is not so easy to trace up moral defects in the crime class to these parents, but occasionally special cases are found in which this can be successfully accomplished, and we have given some striking examples which deserve serious consideration. They are authentic and form the basis for further investigations by those who will take the trouble to explore this field open for examination. That mental disease, or the morbid abnormal mental state as a crime cause, is a subject now receiving very serious attention. It is specially referred to, in order, by comparative reasoning, to establish that the abnormal moral condition is also replete with the cause of crime. By a process of deductive reasoning, it may be asserted that if mental disease induces to crime, moral unsoundness or inherited moral weaknesses have a similar effect.

In support of the first of these propositions, we cite the following extract from a volume, by Henry Maudsley, M. D., a very high medical authority in England, entitled *Responsibitity in Mental Disease.* International scientific series. Appleton & Co., N. Y., 1874.

" Notwithstanding that the influence of hereditary antecedents upon the character of the individual has been admitted by all sorts and conditions of men, its important bearing upon moral responsibility has not received the serious consideration which it deserves.

" Laws are made and enforced on the supposition that all persons who have reached a certain age, arbitrarily fixed as the age of discretion, and are not deprived of their reason, have the capacity to know and obey them; so that when the laws are broken, the punishment inflicted is in proportion to the nature of the offence, and not to the actual moral responsibility of the individual. The legislator can know nothing of individuals; he must necessarily assume a uniform standard of mental capacity, so far as a knowledge of right and wrong, and of moral power, so far as resistance to unlawful impulses are concerned; exceptions being made of children of tender age, and of persons of unsound mind.

" There can be no question, however, that this assumption is not in strict accordance with facts, and that there are in reality many persons who, without being actually imbecile or insane, are of lower moral responsibility than the average of mankind; they have been taught the same lessons as the rest of mankind, and have a full theoretical knowledge of them, but they have not really assimilated them; the principles inculcated never gain that hold of their minds which they gain in a sound and well constituted nature. After all that can be said, an individual nature will only assimilate, that is, will only make of the same kind with itself, what is fitted to further its special developement, and this it will, by a natural affinity, find in the conditions of its life. To the end of the chapter of life the man will feel, think and act according to his kind. The wicked are not wicked by deliberate choice of the advantages by wickedness which are a delusion, or of the pleasures of wickedness, which are a snare, but by an inclination of their natures, which makes the evil good to them, and the good evil: that they choose the gratification of a present indulgence, in spite of the chance or certainty of future punishment and suffering, is often a proof not only of a natural affinity for the evil, but of a deficient understanding and a feeble will.

"Not until comparatively lately has much attention been given to the way criminals are produced. It was with them much as it was at one time with lunatics; to say of the former that they were wicked, and of the latter that they were mad, was thought to render any further explanation unnecessary and any further inquiry superfluous. It is certain, however, that lunatics and criminals are as much manufactured articles as are steam engines and calico printing machines, only the processes of the organic manufactory are so complete that we are not able to follow them. They are neither accidents nor anomalies in the universe, but come by law and testify to casuality; and it is the business to find out what the causes are and by what laws they work. There is nothing accidental, nothing supernatural in the impulse to do right or in the impulse to do wrong; both come by niheritance or by education; and science can no more rest content with the explanation which attributes one to the grace of heaven and the other to the malice of the devil, than it could rest content with the explanation of insanity as a possession by the devil. The few and imperfect investigations of the personal and family histories of criminals which have yet been made, are sufficient to excite some serious reflections. One fact which is brought strongly out by these inquiries is that crime is often hereditary; that just as a man may inherit the stamp of the bodily features and characters of his parents, so he may also inherit the impress of their evil passions and propensities; of the true thief as of the true poet it may be indeed said that he is born, not made. That is what observation of the phenomena of hereditary would lead us to expect; and although certain theologians, who are prone to square the order of nature to their notions of what it should be, may repel such doctrine as the heritage of an immoral in place of a moral sense, they will in the end find it imposssible in this matter, as they have done in other matters, to contend against facts. To add to their misfortunes, many criminals are not only begotten and conceived, and bred in crime, but they are instructed in it from their youth upwards, so that their original criminal instincts acquire a power which no subsequent efforts to produce reformation will ever counteract.

" All persons who have made criminals their study, recognize a distinct criminal class of beings, who herd together in our large cities in a thieves' quarter, giving themselves up to intemperance, rioting in debauchery, without regard to marriage ties or the bars of consanguinity, and propagating a criminal population of degenerate beings. For it is furthermore a matter of observation that this criminal class constitutes a degenerate or morbid variety of mankind, marked by peculiar low physical and mentral characteristics. They are, it has been said, as distinctly marked off from the honest and well bred operatives, as "black faced sheep are from other breeds," so that an experienced detective officer or prison official could pick them out from any promiscuous assembly at church or market.

" Their family likeness betrays them as follows :—" By the hand of nature marked, quoted, and signed to do a deed of shame." They are scrofulous, not seldom deformed, with badly formed angular heads ; are stupid, sullen, sluggish, deficient in vital energy, sometimes afflicted with epilepsy. As a class, they are of mean and defective intellect, though excessively cunning, and not a few of them are weak minded and imbecile. The women are ugly in features, and without grace of expression or movement. The children, who become juvenile criminals, do not evince the educational aptitude of the higher industrial classes ; they are deficient in the power of attention and application, have bad memories, and make slow progress in learning. Many of them are weak in mind and body, and some of them actually imbecile.

" We may accept then the authority of those who have studied criminals, that there is a class of them marked by defective physical and mental organization ; one result of their natural defect, which really determines their destiny in life, being an extreme deficiency or complete absence of moral sense. In addition to the perversion or entire absence of moral sense, which experience of habitual criminals brings prominently out, other important facts disclosed by the investigation of their family histories are, that a considerable proportion of them are weak-minded or epileptic, or become insane, or that they spring from families in which insanity, epilepsy, or some other neurosis exist, and that the diseases from which they suffer, and of which they die, are chiefly tubercular diseases, and diseases of the nervous system. Crime is a sort of out-let, by which their unsound tendencies are discharged ; they would go mad if they were not criminals, and they do not go mad because they are criminals.

" Crime is not then, in all cases, a simple affair of yielding to an evil impulse, or a vicious passion, which might be checked were ordinary control exercised ; it is clearly sometimes the result of an actual neurosis, which has close relations of nature and descent to other neuroses, especially the epileptic and the insane neuroses ; and this neurosis is the physical result of the physiological laws of production and evolution. · No wonder that the criminal psychosis, which is the mental side of neurosis, is for the most part intractable malady, punishment being of no avail to produce a permanent reformation. The dog returns to its vomit, and the sow to its wallowing in the mire. A true reformation would be the re-forming of the individual nature ; and how can that, which has been forming through generations, be re-formed within the term of a single life? Can the Ethiopian change his skin, or the Leopard his spots?

" Thus then, when we take the most decided forms of human wrong-doing, and examine the causes and nature of the moral degeneracy which they evince, we find that they are not merely subjects for the moral philosopher and the preacher, but that they rightly come within the scope of positive scientific research. The metaphysical nature of a man, as an abstract being, endowed with a certain fixed moral potentiality to do the right and eschew the wrong, is as little applicable to each human being born into the world, as the notion of a certain fixed intellectual power would be applicable to each being, whether of good mental capacity, imbecile or idiot. There are, as natural phenomena, manifold gradations of understanding from the highest intellect to the lowest idiocy; and there are also, as natural phenomena, various degrees of moral between the highest energy of a well fashioned will, and the complete absence of moral sense. Nor are intellect and moral power so dependent mutually, as necessarily to vary together, the one increasing and decreasing, as the other increases and decreases. Experience proves conclusively that there may be much intellect with little morality, and much morality with little intellect."

Taking these views of Dr. Maudsley as authority on this subject, it is not solely by deduction that the hereditary nature of crime, in the moral constitution is to be maintained. In the XVth volume of Journal of Mental Science, there is a paper by J. B. Thomas, of singular interest, under the caption of " The Hereditary Nature of Crimes." It can hardly be denied, that if special, or particular, or peculiar traits in the physical and mental condition can be inherited by offspring from parents, then by a parity of reasoning, the moral defects of parents are likewise transmitted, and exert as malign influences as other vicious or unhealthy inherited physical characteristics.

To support these views, the following extracts from a paper prepared by J. B. Thomas, L. R. C. S., resident Surgeon General, prison for Scotland, at Perth, A. D. 1870, are here presented :

"On the border-land of lunacy lie the criminal populations. It is a debateable region, and no more vexed problem comes before the medical psychologist than this, viz: Where badness ends and madness begins in criminals. * * *

The propositions that crime is generally committed by criminals hereditarily disposed to it, I shall try to prove by showing—

1. That there is a criminal class distinct from other civilized and criminal men.

2. That this criminal class is marked by peculiar physical and mental characteristics.

3. That the hereditary nature of crime is shown by the *family* histories of criminals.

4. That the *transformation* of other nervous diseases with crime in the criminal class, also proves the alliance of hereditary crime with other diseases of the mind, such as epilepsy, dipso mania, insanity, &c.

5. That the incurable nature of crime in the criminal class goes to prove its hereditary nature. * * *

* * * Not to heap up proofs which are ample, I shall only add to this my own testimony as a prison surgeon, as to the mental condition of prisoners generally. Out of a population of 5,432, no less that 673 were placed on my registers as requiring care and treatment on account of their mental condition. * * *

One of the most remarkable examples of a criminal family I know of, is as follows: Three brothers had families amounting to fifteen members in all. Of these, fourteen were utterers of base coin; the fifteenth appeared to be an exception, but was at length detected in setting fire to his house, after insuring it for four times its value. * * *

Of 109 prisoners, out of 50 families, were in prison at one time. Of one family 8 were known. The father had been several times under long sentences. Near relations I found in prison, were the father, two sons, three daughters, one daughter-in-law, and a sister-in-law. * * * There were in prison three cousins, (two being sisters,) two aunts, and two uncles, of the same family. * * Of two families, six were in prison about the same time, viz:—four brothers and two sisters.

The following instances are from the reports of a gentleman of large experience in Glasgow:

In one family there were five criminals—one male and four females; the last was executed. The girls had lived by thieving and profligacy. Their evil propensities seem to have been inherited from the mother; the mother also being a poor silly creature.

In another family were two males and two females criminals, all transported for theft they inherited from the mother.

In another family four females were all thieves; often in prisons; inherited from the father.

In another family three girls, all wicked; two of them were banished; father and mother criminals.

Again, two males and two females were active thieves by inheritance.

Again, one male and two females, incorrigible thieves; their mother a thief; grand-mother also.

Again, two males and two females; three transported.

Again, three girls, all thieves by the mother's heritage.

Again, a family of four, all thieves by the mother.

Again, one male and two females, with the mother; all sentenced to transportation.

Again, four or five in this, all thieves; two sentenced to transportation.

Let me wind up this dark roll with an example from a French report. The history of a family in Bayeaux, is this:—One of them had been sentenced to the Travaux forces for life, having committed assassination. Five remained—three brothers, one sister, and her husband, who all became robbers. Their uncles and aunts had been in les bogues; one nephew also, and others took to criminal courses by an hereditary proclivity that seemed quite irresistible.

I offer the following conclusions from the foregoing examen:

1st. That crime being hereditary in the criminal class, measures are called for to break up the caste, and community of the class.

2d. That transportation and long sentences of habitual criminals are called for, in order to lessen the criminal offenders.

3d. That old offenders can scarcely be reclaimed, and that juveniles brought under very early training are the most hopeful; but even these are apt to lapse into their hereditary tendency.

4th. That crime is so nearly allied to insanity, as to be chiefly a psychological study."

The direct influences exerted to produce crime cause on that aggregation of people in more or less dense populations, as contra distinguished from agricultural life in sparse settlements, or villages and hamlets are not authoritatively to be yet determined. There are now no positively ascertained data on which to erect any hypothesis which will bear careful study or stand anaylitical criticisms. The scientist can only obtain here and there some facts, but what is to be proved by them in their relation to the general subject, is far from ascertainable, because though they are facts, they are not connected with what may be found to be either explanatory or contradictory, or as essentially varying the proof, from the theory assumed

It however may be asserted, that the influence of the social forces which produce crime on those subjected to them, are positive and controlling. These social forces are motors which come from the compression in large populations which evolves necessity, opportunity, afflicted immunity, dwarfed moral perceptions, blunted or weakened comprehension, and a reliance on precarious means for support rather than honest labor or trade, or regular employments in a large or smaller class of the population. Temptation to commit crime, a lack of a resisting power to repress this temptation, a lack of comprehension which fails to set up a distinctive understanding of the disobedience of law which temptation to violate it urges in individuals, is often the consequence of the action of these social forces, and as classes of society are by near association more liable to the operation of those forces because of the aggregation of those moral defects which are individual to each member of the class, it may not be too broad an assertion to declare that crime is often produced by social influences.

The observation of careful investigation shows that in large populations there exists a class, or it may be classes of invididuals, who are criminals by reason of their personal habits, tastes, associations, moral defects, mental weaknesses, and the cultivation of that animal instinct called cunning, which may be described as a physical sagacity that does not partake of the faculty of reason beyond the line which marks the blending of mental with the physical constituents of human nature. This class or classes are found in the depressed state of the social structure. They grow out of the deep shadow which this structure throws, and are indigenous to it.

The motives for the action, the impulses, the motors, the impelling or compelling causes are produced by the presence, on this class or classes, of the social forces which are constantly in action in large populations.

While it is true, that there are more criminals in large than in small populations, and that the proportion of criminals to population is the evidence of the fact. Yet that does not wholly explain why the criminal exists, unless it is admitted that populations create criminals in the ratio of crime to these communities. Why an individual should be a criminal in a city and not in a village, is unexplained by the proof that in the city he is, and in the village he is not a criminal. If it is to be explained by the assertion that in a city the demand for employment is less than the supply, and the excess is forced into crime for support, then the question is at once suggested, why are the unemployed persons driven to crime, if in these larger populations there are no predisposing causes which belong to them.

Take the facts as they are, it is plain that in large communities there are social forces, which by their pressure on parts or classes, evolve criminal conditions, and out of them come crimes and criminals, or crime cause forced into operation.

One mode to test the influence of society as contributing to crime, educating in crime, creating crime causes and crime classes, let us invite attention to the following statistics: We have given the several counties of this State, then the number of crimes of which individuals have been convicted, then the character of these crimes. While this is neither conclusive nor exhaustive of the premises to be proven, it is something to show what is the proportion of criminals to populations, and what counties produce the largest number of criminals, and for what offences they are charged. A comparison instituted from these facts will direct closer investigation and suggest into what channels investigation is to be directed. Such a comparison will be suggestive. Some light will be thrown on the subject, and thus enable scientists to adopt an initial point for co-operative examinations in various localities.

COMPARATIVE TABLE.

CRIME AS AN ELEMENT IN SOCIAL CONDITION, 1875.	No. persons charged with crime........	No. of bills tried....	No. of acquittals....	No. of convictions..	No. *nolle prosequies,*
Abduction	2	......	......	......	1
Abortion	35	11	6	6	......
Abortion, attempt to procure	2	......	......	......	......
Accessory to murder	1	......	......	......	......
Adultery	199	42	17	25	22
Adultery and bastardy	1	......	......	......	1
Adultery and fornication	2	......	......	......	2
Affray	10	2	......	1	......
Aggravated assault	68	16	8	7	10
Aiding prisoner to escape	8	2	1	2	......
Arson	96	52	30	18	5
Assault and battery, &c	5,035	1,762	982	660	359
Assault to commit a rape	134	64	36	18	7
Assault and battery to kill	672	296	112	151	52
Assault and battery to rob	75	32	16	14	1
Assault and battery to steal	26	13	4	6	......
Assaulting an officer	9	2	1	1	1
Barratry	9	3	2	1	......
Bawdy house	128	38	8	30	4
Bigamy	53	22	7	13	3
Blasphemy	1	......	......	......	......
Breaking into cotton mills	1	1	......	1	......
Breaking mansion	1	......	......	......	......
Breaking prison and escape	12	4	......	1	......
Breaking prison, attempt to	1	......	......	1	......
Burglary	363	249	143	56	7
Burglary and larceny	3	1	......	1	......
Carrying concealed deadly weapons	130	62	27	37	2
Common scold	3	3	......	3	......
Concealing death of child	5	2	1	1	1
Conspiracy	138	26	24	7	11
Contempt of court	14	7	5	7	11
Corrupting an elector	3	5	......	......	1
Counterfeiting	4	1	......	......	2
Cruelty to animals	53	25	18	9	2
Cutting timber trees	8	5	5	......	......
Defrauding and cheating	39	8	7	3	5
Deserting family, &c	211	45	60	66	20
Desertion	5	......	......	1	1
Desertion from vessel	17	11	5	10	4
Destroying cash-book	1	1	......	......	......
Destroying land-mark	6	......	1	1	1

COMPARATIVE TABLE—CONTINUED.

CRIME AS AN ELEMENT IN SOCIAL CONDITION, 1875.	No. persons charged with crime	No. of bills tried	No. of acquittals	No. of convictions	No. *nolle prosequies*,
Disorderly house	120	39	25	24	5
Disorderly and breach of peace	613	98	165	104	62
Disturbing religious and other meetings	45	5	2	8	5
Disturbing an election	2	......	......	......	1
Embezzlement	191	57	34	13	18
Embracery	3	......	......	......	......
Entering to steal	102	47	18	23	......
Escape	5	1	......	2	1
Extortion and taking an illegal fee	3	1	1	......	......
False pretence	503	145	92	30	76
False imprisonment	3	......	......	......	......
False personation	1	......	......	1	......
Felony, attempt at	28	2	1	7	1
Felony, accessory to	3	1	1	......	......
Felonious entry	7	2	......	6	......
Fortune telling	1	2	......	1	......
Forcible entry	173	63	42	28	7
Forgery	183	70	39	26	19
Fornication	89	39	12	16	10
Fornication and bastardy	635	191	25	162	147
Fraud	6	1	2	......	3
Fraudulent disposal and secretion of property	10	4	2	......	......
Fraudulently issuing insurance policies	1	......	......	......	......
Fraudulently issuing, making and altering a written instrument	3	......	......	......	......
Gaming house and gambling	103	13	6	5	13
Giving poison with intent to kill	3	2	1	1	......
Having in possession counterfeit money	1	......	......	......	......
Having in possession stolen goods	3	......	......	......	......
Highway robbery	9	7	4	4	1
Horse stealing	56	24	5	22	1
Hunting on Sunday	3	......	......	......	3
Illegal or fraudulent voting	5	......	......	......	......
Illegal practice of medicine	4	......	......	......	......
Indecency	49	21	15	11	2
Interfering with officer	13	7	4	2	......
Killing domestic animals	2	1	......	1	1
Larceny, &c	3,993	1,891	805	937	143
Larceny by bailee	21	4	3	......	......
Larceny, receiving stolen goods	2	1	......	1	......
Libel	51	7	4	2	3
Lottery policies	23	12	4	6	......
Mail robbery	3	......	......	......	......
Malicious mischief	533	177	92	86	45
Malicious trespass	3	......	1	......	......
Manslaughter	25	21	7	13	2
Mayhem	28	11	9	4	......
Misdemeanor	670	154	92	52	38
Misdemeanor in office	3	....	......	.....	1
Murder, first degree	70	16	6	5	......
Murder, second degree	36	22	11	15	......
Neglect of duty	7	2	......	2	3
Nuisance	74	18	14	15	9
Obstructing public highway	6	1	1	3	1
Obstructing execution, legal process	6	4	2	2	......
Passing cut money	9	3	3	......	1
Perjury	115	18	15	5	10
Perjury subordination	3	......	......	......	......

COMPARATIVE TABLE—CONTINUED.

CRIME AS AN ELEMENT IN SOCIAL CONDITION, 1875.	No. persons charged with crime......	No. of bills tried....	No. of acquittals....	No. of convictions...	No. *nolle prosequies,*
Placing nets in canal	2	2	2	......	......
Placing obstructions on railroad	1	2	......	1	......
Rape	106	38	19	16	4
Receiving stolen goods	197	75	58	30	11
Refusing or resisting officers	23	11	14	3	2
Rescuing a prisoner	12	2	1	1	......
Robbery	164	57	22	33	1
Robbery and larceny	1	......	......	......	......
Riot	416	56	53	97	15
Seduction	61	13	4	8	6
Seduction and bastardy	3	1	......	......	......
Sending a challenge	3	2	1	1	......
Sending a threatening letter	1	......	......	......	......
Selling impure milk	1	......	......	......	......
Selling unwholesome meat	1	......	......	......	......
Selling goods without license	17	2	......	2	3
Shooting, &c	3	2	2	......	......
Soliciting adultery	1	......	......	......	1
Surety of peace	183	48	19	58	24
Taking fruit	1	......	......	......	......
Threats	12	1	3	......	......
Throwing destructive substance	1	1	1	......	......
Unlawfully taking notes	4	......	......	......	......
Unlawful sale of railroad tickets	6	......	......	......	......
Unlawfully receiving exonerated taxes	1	......	......	......	......
Violation of liquor law	2,559	349	136	255	217
Violation of game law	9	1	......	1	......
Violation of livery act	1	1	1	......	......
Violation of election laws	2	2	1	1	......
Not stated	4	......	......	......	......
	20,040	6,679	3,356	3,356	1,442

The foregoing tables were made for the year 1875. They consist of the best information attainable from the sources enquired of, yet they are by no means complete. It is only a tentative exposition that has been accomplished. To make the deductions from these tables useful as an approximation to the actual facts, a certain equivocation must be admitted, but it may not destroy the basis of an hypothesis that is at least reasonable from even this data.

CRIMES, CONVICTIONS AND COUNTIES FOR 1875.

COUNTIES.	CRIMES AGAINST PROPERTY.				CRIMES AGAINST PERSONS.						
	Larceny	Burglary	Forgery	Horse stealing	Murder, &c.	Rape	Asst. & bat., to commit rape	Fornication and bastardy	Riot	Adultry	Seduction
Adams	2							1			
Allegheny	75	8	1		4	2	3	10	1	4	3
Armstrong	7		1	1				2	2	2	
Beaver								2			
Bedford	2							1			
Berks	15		2					11	1		
Blair	5							1		3	
Bradford	4				1		2				
Bucks	11	4				1		1	3	2	
Butler	11	2			1						
Cambria	5										
Cameron	1	1									
Carbon	3							3			
Centre	3	1				1					
Chester	33	9		1		1	1	1			
Clarion				1							
Clearfield	5							1	38		
Clinton	5	1					2			1	
Columbia	1										
Crawford	10	5	1	3				2	1		
Cumberland	10	4		1			1	5		1	1
Dauphin	30	2						1		2	
Delaware	13	4				1					
Elk	2										
Erie	4				1				2		
Fayette	17	6	1	1		2		1	3	4	
Forest											
Franklin	10			1						1	
Fulton				3							
Greene					1						
Huntingdon	7	1		1				1			
Indiana	3			1				1			
Jefferson	6							1			
Juniata	3							2			
Lancaster	33	13				1	1	1	5		
Lawrence	1			1							
Lebanon	15	1				1	1	2			
Lehigh	21		1					35		1	
Luzerne	3				1				1		
Lycoming	10	2	1		1						
M'Kean		1									
Mercer	7	1						4		1	
Mifflin								4		1	
Monroe							1	2			
Montgomery	32	19						4	14		
Montour	1										
Northampton	32	4	1			1	1	6	7		2
Northumberland	20	3	2		3	1	1	5			
Perry	1			1							
Philadelphia	366	40	14		5	1	1	4	1		
Pike	1										
Potter	1	1			1				6		
Schuylkill	33	1	1	1	1		1	28		1	1
Snyder	1							4		1	1
Somerset	3							3			
Sullivan	1										
Susquehanna											

CRIMES, CONVICTIONS AND COUNTIES—Continued.

COUNTIES.	CRIMES AGAINST PROPERTY.				CRIMES AGAINST PERSONS						
	Larceny	Burglary	Forgery	Horse stealing	Murder, &c	Rape	Asst. and bat., to commit rape	Fornication and bastardy	Riot	Adultery	Seduction
Tioga	7	4	....	....	....	1	....	1	....	....	....
Union	7	....	....	....	....	....	....	1	....	....	....
Venango	4	....	....	....	....	2	....	1	....	....	....
Warren	1	....	....	....	....	....	1	....	....	....	....
Washington	4	4	....	2	....	....	....	1	1	....	....
Wayne	3	1	....	....	....	....	....	....	....	....	....
Westmoreland	15	....	....	3	....	....	....	2	15	....	....
Wyoming	5	....	....	....	....	....	....	....	....	....	....
York	6	....	....	....	....	....	....	2	1	....	....
Totals	937	143	26	22	20	16	18	162	97	25	8

Taking these counties of this State which are agricultural, that is in which agriculture is the predominant industry, and comparing them with others that are mining, or in which mining is the predominant industry, we find a singular development of social phenomena.

For example, in Lehigh there are 35 convictions for fornication and bastardy; in Schuylkill, 28; in Armstrong and Beaver, 2 each; in Berks, 11; in Cumberland, 5; in Potter, 6; in Montgomery, Mercer and Mifflin, 4 each, and in Lancaster, 5.

For larceny, Armstrong, 7; Berks, 15; Blair, 5; Bucks, 11; Butler, 11; Chester, 33; Clearfield and Clinton, 5 each; Crawford and Cumberland, 10 each; Dauphin, 30; Lancaster, 33; Montgomery, 32; Philadelphia, 366.

The following table is here introduced as a basis for considering the question involved. When proper and full statistical information is obtained, by which to treat these questions, then a comparison can be instituted which will be of value, both as to causes, crime cause, and the effects of social influence on individuals. All that is now sought to be presented, is the evidence as yet ascertainable, and to invite careful attention, and therefrom a study of the theory asserted:

CRIME AS AN ELEMENT IN SOCIAL CONDITION, 1875.	No. persons charged with crime	No. of bills tried....	No. of acquittals....	No. of convictions ..	No. *nolle prosequies*,
Adams	82	21	16	9	21
Allegheny	1,987	509	364	315	230
Armstrong	162	53	22	35	7
Beaver	135	39	12	28	11
Bedford	84	16	5	12	37
Berks	577	119	75	72	4
Blair	230	35	28	35	38
Bradford	95	34	15	33	19
Bucks	257	72	41	60	24
Butler	318	32	14	20	22
Cambria	116	42	26	31	14
Cameron	57	11	8	7	14
Carbon	128	45	14	31	4
Centre	128	14	5	8	11
Chester	197	83	14	77	51
Clarion	117	20	10	11	5
Clearfield	260	27	13	61	26
Clinton	115	17	8	19	3
Columbia	42	10	7	5	17
Crawford	126	56	12	44	3
Cumberland	166	49	10	39	6
Dauphin	694	137	77	86	22
Delaware	123	74	40	33	11
Elk	22	10	5	5	2
Erie	310	64	55	26	77
Fayette	258	88	28	64	55
Forest	6	2	1	1	1
Franklin	276	71	54	49	71
Fulton	43	8	2	8	21
Greene	67	14	4	9	13
Huntingdon	69	27	11	28	27
Indiana	63	21	6	17	27
Jefferson	48	29	14	21	30
Juniata	50	17	3	9	11
Lancaster	509	345	157	114	13
Lawrence	118	25	14	12	10
Lebanon	81	39	13	31	29
Lehigh	308	166	31	142	41
Luzerne	1,089	56	34	21	3
Lycoming	270	49	10	35	55
M'Kean	65	22	12	9	4
Mercer	159	32	16	23	5
Mifflin	103	15	4	12	11
Monroe	30	9	11	9	......
Montgomery	282	127	19	119	12
Montour	50	27	18	18	10
Northampton	426	161	56	153	20
Northumberland	203	82	24	58	5
Perry	66	4	6	6	40
Philadelphia	6,298	3,002	1,601	879	......
Pike	28	8	4	4	......
Potter	62	8	9	10	8
Schuylkill	650	309	165	206	120
Snyder	42	11	4	8	5
Somerset	62	15	4	11	11
Sullivan	8	2	......	2	1
Susquehanna	84	6	5	1	8
Tioga	133	25	4	22	9
Union	32	13	3	13	1

CRIME AS AN ELEMENT IN SOCIAL CONDITION, 1875.	No. persons charged with crime.......	No. of bills tried....	No. of acquittals....	No. of convictions...	No. *nolle prosequies,*
Venango	76	23	11	12	9
Warren	142	14	5	9	19
Washington	198	51	16	44	22
Wayne	54	9	8	7	9
Westmoreland	240	56	20	50	14
Wyoming	50	4	1	5	2
York	414	98	69	29	2
	20,040	6,679	3,356	3,385	1,442

The counties, excluding Philadelphia and Allegheny, which show the largest number of persons charged with crime, are Berks, Butler, Clearfield, Dauphin, Erie, Franklin, Lancaster, Lehigh, Luzerne, Lycoming, Montgomery, Schuylkill, Westmoreland and York.

The crimes with which the greatest number of persons were charged are abortion, adultery, arson, assaults, assault and battery, assault to commit rape, to kill, to rob, to steal, which six crimes together make a total of persons charged or charges against individuals of 6,010 ; bawdy-house, bigamy, burglary, carrying concealed deadly weapons, embezzlement, entering to steal, false pretences, felony, attempt at, forgery, gaming-house and gambling, horse stealing, larceny, manslaughter, mayhem, murder, first degree, second, perjury, rape, receiving stolen goods, robbery, riot, seduction ; the total number of charges for 1875 were 20,040 ; number convicted, 3,385 ; acquittals, 3,356 ; number of bills tried, 6679 ; *nolle prosequies,* 1,442.

The crimes against persons are, say 8,000 ; those against property, say 12,000, $\frac{8}{20}$ of all the crimes charged are against persons, and $\frac{12}{20}$ against property.

There is another branch of this subject which seems to invite remark. In treating of the controlling influences that tend to the commission of crime, we cannot overlook school instruction or those influences which may possibly be originated in the effects of what is commonly known as "Education," or mental culture.

Without attempting to discuss the value of popular instruction for the youth or to criticise any system of public or private education, we venture to assert that there are crimes which arise directly out of these influences, and which require knowledge so obtained to perpetrate. If the former suggestion, that the compression of the social forces induces to crime, then those offences which come from education are only the more easily forced into society by the possessed ability to commit such crimes. If facts warrant this suggestion, then education, meaning that instruction imparted by school training, is an agent in developing the crime-cause. Here again the want of full statistical information is sadly manifest. But what facts are to be obtained must be used, till fuller and more complete statistics explain them, or overturn any hypothesis founded on what is known. Taking the year 1875, we have the following tables, prepared it is true, by one State penitentiary, and including the large cities in the Eastern district only of Pennsylvania.

The examination of the following tables should be directed to two points, in order to bring out clearly what is considered as the attendant consequences of school instruction as applied to mental culture, and the absence or neglect of that equally important instruction or trade education. It may not be improbable from what this examination discloses, that mere school instruction disinclines a greater or less proportion of those who receive it, out of the great mass of pupils, for trade education. If this be so, and school education over-supplies the demand for such educated persons in ordinary business, the excess, not having a vocation for self support, and as their education either disinclined to skilled industrial vocations, or induced to disregard such means for maintenance, become the more easily liable to the compression of those social forces which drive into crime those who have acquired ability to commit offences which depend on mental education for their successful commission.

But the tables will show facts, and the careful student must make his own deductions, or explain those that are above given, which appear to be at least reasonable.

If worthy of notice that a far larger number of offenders are recorded as having attended "public schools," than those who "never went to school." A pertinent question is presented which is yet to be answered, and it may be thus formulated, Does the association of youths in schools create an influence which tends to depreciate trade education by reason of the impression that mental "education" is an acquirement which elevates above it? So pernicious and false a result of mere mental instruction, should be counteracted, if it is produced, by showing that skilled trade education demands far larger capacity than superficial "school learning," for it requires not only mental, but moral and physical training, and also a knowledge of special sciences.

STATEMENT *exhibiting the Education of Convicts received each year, convicted of crimes against property and crimes against persons, thus presenting in a tabular view the changing educational as well as criminal relations of convicts received each year into the Eastern State Penitentiary, from 1829 to 1873, inclusive.*

YEARS.	CONVICTED OF CRIMES AGAINST PROPERTY.								CONVICTED OF CRIMES AGAINST PERSONS.								Whole number rec'd each year..........
	Illiterate.		Read only.		Read and write.		Total convicts ag'st property.		Illiterate.		Read only.		Read and write.		Total convicts ag'st persons.		
	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	
1829................	......	....	3	33.33	6	66.67	9	100.00	......	....	......	....	......	....	......	....	9
1830................	9	18.39	9	18.37	21	42.86	39	79.60	......	....	4	8.16	6	12.24	10	20.40	49
1831................	7	14.	7	14.	28	56.	42	84.00	4	8.	3	6.	1	2.	8	16.	50
1832................	6	17.65	9	26.47	13	38.24	28	82.36	......	....	3	8.82	3	8.82	6	17.64	34
1833................	17	22.08	15	19.48	38	49.35	70	90.91	2	2.60	3	3.89	2	2.60	7	9.09	77
1834................	17	14.40	22	18.65	66	55.93	105	88.98	4	3.39	4	3.39	5	4.24	13	11.02	118
1835................	64	29.49	48	22.12	87	40.09	199	91.70	5	2.30	7	3.23	6	2.77	18	8.30	217
1836................	35	24,47	31	21.68	61	42.66	127	88.81	7	4.90	5	3.49	4	2.80	16	11.19	143
1837................	46	28.59	33	20.50	67	41.61	146	90.68	4	2.49	4	2.49	7	4.34	15	9.32	161
1838................	54	30.33	34	19.10	69	38.77	157	88.20	11	6.18	4	2.25	6	3.37	21	11.80	178
1839................	54	30.17	45	25.14	69	38.55	168	93.86	3	1.67	2	1.12	6	3.35	11	6.14	179
1840................	36	28.06	24	17.27	58	41.72	121	87.05	6	4.32	3	3.16	9	6.47	18	12.95	139
1841................	26	20.63	24	19.05	58	46.03	108	85.71	6	4.76	1	.80	11	8.73	18	14.29	126
1842................	29	20.42	25	17.61	71	50.	125	88.03	4	2.82	4	2.82	9	6.33	17	11.97	142
1843................	31	19.87	25	16.03	86	55.13	142	91.03	3	1.92	3	1.92	8	5.13	14	8.97	156
1844................	31	22.47	25	18.11	63	45.65	119	86.23	2	1.45	2	1.45	15	10.87	19	13.77	138
1845................	15	10.49	29	20.28	62	43.35	106	74.12	9	6.30	5	3.50	23	16.08	37	25.88	143
1846................	14	11.97	13	11.11	69	58.98	96	82.05	6	5.13	6	5.13	9	7.69	21	17.95	117
1847................	23	18.55	11	8.87	58	46.77	92	74.19	6	4.84	3	2.42	23	18.55	32	25.81	124
1848................	20	16.53	11	9.09	68	56.20	99	81.82	4	3.30	9	7.44	9	7.44	22	18.18	121
1849................	19	14.84	14	10.94	61	47.66	94	73.44	7	5.47	9	7.03	18	14.06	34	26.56	128
1850................	11	7.33	18	12.	72	48.	101	67.33	19	12.67	11	7.33	19	12.67	49	32.67	150
1851................	14	9.52	20	13.61	85	57.82	119	80.95	3	2.04	10	6.80	15	10.21	28	19.05	147
1852................	13	10.32	13	10.32	69	54.76	95	75.40	5	3.97	8	6.35	18	14.28	31	24.60	126
1853................	12	10.26	9	7.69	70	59.83	91	77.78	5	4.27	5	4.27	16	13.68	26	22.22	117
1854................	14	11.29	15	12.10	72	58.06	101	81.45	3	2.42	6	4.84	14	11.29	23	18.55	124

1855	6	4.11	12	8.22	165	71.91	123	84.24	5	3.43	5	3.43	13	8.90	23	15.76	146
1856	16	10.96	10	6.85	96	65.75	122	83.56	4	2.74	5	3.43	15	10.27	24	16.44	146
1857	38	16.03	37	15.61	136	57.39	211	89.03	6	2.53	4	1.69	16	6.75	26	10.97	237
1858	29	14.01	25	12.08	122	58.93	176	85.02	7	3.38	2	.97	22	10.63	31	14.98	207
1859	25	12.19	19	9.27	123	60.	167	81.46	8	3.90	13	6.34	17	8.30	38	18.54	205
1860	33	12.74	29	11.20	152	58.68	214	82.62	8	3.09	8	3.09	29	11.20	45	17.38	259
1861	28	15.38	24	13.19	94	51.65	146	80.22	6	3.30	2	1.10	28	15.38	36	19.78	182
1862	18	13.33	22	16.30	64	47.41	104	77.04	8	5.93	7	5.18	16	11.85	31	22.96	135
1863	18	9.83	22	12.02	103	56.30	143	78.15	8	4.37	5	2.73	27	14.75	40	21.85	183
1864	21	14.	11	7.33	81	54.	113	75.33	7	4.67	10	6.67	20	13.33	37	24.67	150
1865	41	15.95	26	10.12	161	62.65	228	88.72	8	3.11	3	1.17	18	7.	29	11.28	257
1866	42	11.54	35	9.61	246	67.59	323	88.74	10	2.75	3	.82	28	7.69	41	11.26	364
1867	48	16.49	19	6.53	173	59.45	240	82.47	14	4.81	5	1.72	32	11.	51	17.53	291
1868	33	13.04	23	9.09	162	64.03	218	86.16	8	3.16	3	1.19	24	9.49	35	13.84	253
1869	37	11.98	36	11.65	184	59.54	257	83.17	14	4.53	3	.97	35	11.33	52	16.83	309
1870	44	13.97	20	6.35	181	57.46	245	77.78	18	5.71	10	3.18	42	13.33	70	22.22	315
1871	40	16.67	8	3.33	137	57.08	185	77.08	14	5.84	2	.83	39	16.25	55	22.92	240
1872	36	15.49	11	4.87	113	50.	159	70.36	19	8.41	2	.88	45	20.35	67	29.64	226
1873	36	15.52	1	.43	148	63.79	185	79.74	14	6.03	......	....	33	14.23	47	20.27	232
Total	1,209	16.02	922	12.22	4,128	54.68	6,259	82.94	314	4.16	516	3.00	761	10.08	1,291	17.10	7,550

TABLE exhibiting the counties sending and the educational relations of the 232 convicts received in 1873 into the Eastern State Penitentiary, divided into crimes against property and crimes against persons, with their average age and county per cent.; also, those who attended public and private schools, and those who never went to school, with their average age on leaving, the county per cent. of each, and the per cent. of the whole number received.

COUNTIES.	AVERAGE AGE AND EDUCATIONAL CONDITION OF CONVICTS CONVICTED OF CRIMES AGAINST PROPERTY.									AVERAGE AGE AND EDUCATIONAL CONDITION OF CONVICTS CONVICTED OF CRIMES AGAINST PERSONS.									NEVER WENT TO SCHOOL.		ATTENDED PUBLIC SCHOOL.			ATTENDED PRIVATE SCHOOL.			WHOLE NUMBER RECEIVED FROM EACH COUNTY	
	Illiterate.			Read only.			Read and write			Illiterate.			Read only.			Read and write												
	Average age	No.	County per cent.	Average age	No.	County per cent.	Average age	No.	County per cent.	Average age	No.	County per cent.	Average age	No.	County per cent.	Average age	No.	County per cent.	No.	County per cent.	Average age on leaving school	No.	County per cent.	Average age on leaving school	No.	County per cent.	No.	Per cent.
Bradford							25.	1	50.							31.	1	50.			15.5	2	100.				2	.86
Bucks							32.9	10	71.43	23.	1	7.14				29.6	3	21.43	1	7.14	15.	12	85.72	15.	1	7.14	14	6.03
Chester	26.5	2	100.																2	100.							2	.86
Columbia							29.	1	100.												14.	1	100.				1	.43
Cumberland							28.	2	100.												13.5	2	100.				2	.86
Dauphin	22.2	4	30.77				25.5	7	53.85	28.	1	7.69				34.	1	7.69	8	61.54	14.6	5	38 46				13	5.60
Franklin	20.	2	14.29	23.	1	7.14	24.3	8	57.14	35.	2	14.29				27.	1	7.14	8	57.14	15.8	6	42.86				14	6.03
Lebanon							30.	2	66.67							38.	1	33.33			14.6	3	100.				3	1.29
Luzerne	38.5	2	13.33				33.7	9	60.01	22.	2	13.33				46.5	2	13.33	4	26.67	14.9	11	73.33				15	6.47
Lycoming							26.2	5	83.34	22.	1	16.66							1	16.67	14.	5	83.33				6	2.59
Montgomery	24.5	2	28.57				26.	5	71.43										2	28.57	16.4	5	71.43				7	3.02
Montour										49.	1	33.33				19.5	2	66.67	1	33.33	15.	2	66.67				3	1.29
Northumberland	26.3	3	23.08				29.8	8	61.54							22.	2	15.38	6	46.15	18.5	6	46.15	13.	1	7.70	13	5.60
Perry							38.	1	100.												18.	1	100.				1	.43
Philadelphia	24.5	20	19.61				27.1	63	61.76	27.7	4	3.92				36.4	15	14.71	34	33.33	17.1	59	57.84	15.6	9	8.83	102	43.99
Pike										17.	1	100.							1	100.							1	.43
Schuylkill										25.	1	50.				29.	1	50.	1	50.	13.	1	50.				2	.86
Snyder																23.	1	100.			17.	1	100.				1	.43
Susquehanna							22.6	3	100.00												16.3	3	100.				3	1.29
Tioga							19.2	4	80.							30.	1	20.	1	20.	13.7	4	80.				5	2.16
Wayne																45.	1	100.			15.	1	100.				1	.43
York	21.	1	11.11				36.2	7	77.78							53.	1	11.11	2	22.22	14.4	7	77.78				9	3.88
U. S. District Court							44.7	12	100.												14.1	10	83.33	14.5	2	16.67	12	5.17
Totals	25.3	36	15.52	23.	1	.43	28.8	148	63.79	27.7	14	6.03				33.9	33	14.23	72	31.04	15.9	147	63 36	16.	13	5.60	232	100.

Exhibiting the various Characteristics, etc., of the 1,217 *unapprenticed Prisoners received into the Eastern State Penitentiary, from* 1850 *to* 1859 *inclusive, and the* 1,950 *received from* 1860 *to* 1869.

	FROM 1850 TO 1859 INCLUSIVE.					
	Illiterate.		Read only.		Read and Write	
	Average age,	Number . . .	Average age,	Number . . .	Average age,	Number . . .
Number received............	27.0	208	27.4	197	27.9	812
Adults...........................	31.5	136	30.7	142	30.3	645
Minors......................	18.6	72	18.6	55	19.0	167
Convicted of crimes against property	27.5	154	27.1	143	27.7	691
Convicted of crimes against persons,	25.5	54	28.1	54	28.9	121

During the above period the whole number of prisoners received into the penitentiary was 1,605, of which 243, or 15.14 per cent., were illiterate; 247, or 15.39 per cent, read only; 1,115, or 69.47 per cent., could read and write; and 1,217, or 75.82 per cent., were unapprenticed.

	1,950 UNAPPRENTICED RECEIVED FROM 1860 TO 1869 INCLUSIVE.					
	Illiterate.		Read only.		Read and Write	
	Average age,	Number . . .	Average age,	Number . . .	Average age,	Number . . .
Number received.................	26.7	366	26.8	253	27.3	1,331
Adults..............................	30.6	250	30.2	183	29.6	1,042
Minors..............................	18.2	116	18.0	70	18.7	289
Convicted of crimes against property	26.0	290	26.3	209	27.0	1,131
Convicted of crimes against persons,	29.1	76	29.5	44	29.0	200

During the above decade, the whole number of prisoners received into the penitentiary was 2,383, of which 410, or 17.21 per cent., were illiterate; 296, or 12.42 per cent., read only; 1,677, or 70.37 per cent, could read and write; and 1,950, or 81.83 per cent., were unapprenticed.

Number of unapprenticed prisoners received from 1865 *to* 1875, *inclusive.*

COUNTIES.	Whole No...	Aver'ge age,	Read & write	Illiterate....	Pub. school,	Priv. school,
Philadelphia	940	26.9	723	217	675	10
Dauphin	213	27.1	151	62	62	2
Schuylkill	17	26.5	7	10	10	......
Bucks	154	25.4	112	42	42	3
Luzerne	155	28.3	92	63	63	1
Chester	12	27.0	9	3	3	......
Total	1,491	26.8	1,094	397	397	16

Number received from 1865 *to* 1875 *inclusive, who had no trade on conviction.*

COUNTIES.	Wholo No...	Aver'ge age,	Read & write	Illiterate....	Pub. school,	Priv. school,
Philadelphia	741	26.2	654	87	612	4
Dauphin	178	25.2	154	24	138	......
Schuylkill	15	27.1	11	4	8	......
Bucks	138	24.6	98	40	77	......
Luzerne	130	27.4	115	15	104	......
Chester	6	26.5	4	2	3	......
Total	1,208	25.9	1,036	192	952	4

Number received from 1865 *to* 1875 *inclusive, who had a trade on conviction.*

COUNTIES.	Whole No...	Aver'ge age,	Read & write	Illiterate....	Pub. school,	Priv. school,
Philadelphia	199	27.9	182	17	174	6
Dauphin	35	28.6	28	7	22	2
Schuylkill	2	26.6	2	......	2	......
Bucks	16	26.1	12	4	10	3
Luzerne	25	29.4	18	7	14	1
Chester	6	28.0	6	......	6	......
Total	283	28.2	248	35	228	21

SHOWING *the number of prisoners* (1,650) *received from* 1870 *to* 1876, *who attended public or private schools, and likewise those who never went to schools, and the counties where convicted.*

COUNTIES.	Public schools,	Priv'e schools,	Never went to school......	Total........
Adams	13	.....	4	17
Bradford	23	2	18	43
Bucks	75	1	35	111
Cameron	1	.....	1	2
Carbon	7	.....	10	17
Centre	1	.....	1	2
Chester	3	.....	7	10
Clinton	3	.....	3	6
Columbia	3	.....	3	6
Cumberland	21	.....	26	47
Dauphin	77	.....	43	120
Delaware	3	.....	4	7
Franklin	18	.....	23	41
Juniata	1	.....	.....	1
Lebanon	26	.....	11	37
Luzerne	75	1	35	110
Lycoming	50	1	28	79
Mifflin	3	.....	4	7
Monroe	2	.....	1	3
Montgomery	19	.....	15	34
Montour	13	.....	5	18
Northampton	2	.....	1	3
Northumberland	43	5	34	82
Perry	10	.....	.....	10
Philadelphia	388	34	160	582
Pike	5	.....	4	9
Potter	1	.....	.....	1
Schuylkill	5	.....	8	13
Snyder	4	.....	3	7
Sullivan	1	.....	2	3
Susquehanna	14	.....	9	23
Tioga	18	1	10	29
Union	9	.....	7	16
Wayne	8	.....	5	13
Wyoming	4	.....	4	8
York	27	1	23	51
U. S. District Court	49	5	28	82
Total	1,024	51	575	1,650

Or 1,650 prisoners received from 1870 to 1876, from thirty-six counties of Pennsylvania, including the city of Philadelphia, 1,024 went to public schools; 51 to private schools; 575 never went to school.—[See act of 1871, as to counties.]

A Table *showing the number of persons* (466) *received into the Eastern State penitentiary during the year* 1876, *who attended public or private schools, likewise those who never went to school, and the counties where convicted:*

COUNTIES.	Pub. schools	Priv. schools	Never went to school...	Total.......
Adams	3		2	5
Bradford	5		2	7
Bucks	24		4	28
Carbon	1			1
Chester	2		1	3
Columbia	3		2	5
Cumberland	10		4	14
Dauphin	19		4	23
Delaware	3			3
Franklin	9		2	11
Lebanon	8		3	11
Luzerne	18		11	29
Lycoming	10		8	18
Montgomery	3			3
Monroe	1		1	2
Montour	3			3
Northumberland	10		9	19
Perry	2		2	4
Philadelphia	177	5	30	212
Pike			1	1
Schuylkill			2	2
Susquehanna	1			1
Tioga	5		2	7
Wayne	1		3	4
Wyoming	1			1
York	4		9	13
U. S. district court	29	1	6	36
Total	352	6	108	466

Of 466 persons received during the year 1876 from twenty-six counties of Pennsylvania, including the city of Philadelphia, 352 went to public schools, 6 to private schools, 108 never went to school.

We have received the report for 1876, of the Western State Penitentiary, and from it make the following extracts:

Of the 373 prisoners received during the year 1876, in the Western State Penitentiary, 284 were never apprenticed to a trade; 43 were apprenticed and served; 46 not apprenticed, but served four years at a trade.

Of the 373—285 attended public schools; 19 attended private schools; 69 never went to school.

Of these 373—149 were 25 years of age, and under.

Of these 373—222 could read and write; 104 could read, or read and write imperfectly; 44 could not read or write, and three had a "superior education."

A TABLE *showing number of unapprenticed prisoners received during the year* 1876 *into the Eastern State penitentiary.*

COUNTIES.	Whole No..	Average age,	Read and write.....	Illiterate....	Pub. school,	Priv. school,
Philadelphia	202	21.4	176	26	165	5
Dauphin	22	25.5	19	3	18	....
Schuylkill	2	47.5	1	1	....	....
Bucks	24	26.7	22	2	20	....
Luzerne	27	25.8	22	5	16	....
Chester	2	38.	1	1	1	....
Total	279	30.0	241	38	220	5

Number received during the year 1876 *who had no trade on conviction.*

COUNTIES.	Whole No..	Average age,	Read and write.....	Illiterate....	Pub. school,	Priv. school,
Philadelphia	144	20.8	119	25	107	1
Dauphin	17	23.4	14	3	13	....
Schuylkill	2	47.5	1	1	....	....
Bucks	18	24.9	16	2	14	....
Luzerne	13	25.9	8	5	2	....
Chester	2	38.	1	1	1	....
Total	196	30.8	159	37	137	1

Number received during the year 1876 *who had a trade on conviction.*

COUNTIES.	Whole No..	Average age,	Read and write.....	Illiterate....	Pub. school,	Priv. school,
Philadelphia	58	22.	57	1	58	4
Dauphin	5	27.7	5	....	5	....
Schuylkill	....	......	......	....	......	....
Bucks	6	85.5	6	....	6	....
Luzerne	14	26.	14	....	14	....
Chester	....	......	......	....	......	....
Total	83	26.9	82	1	83	4

Total number of prisoners received into the Eastern State penitentiary during the year 1876 from Philadelphia county was 212; Dauphin, 23; Schuylkill, 2; Bucks, 28; Luzerne, 29, and Chester 3.

The purpose of this paper is to call attention to the cause of crime, the influences which exist to create it, and to those social conditions out of which it is produced, as well as to the fact that in many instances it is an inherited trait in the moral character of individuals, over which they exercise no preventive control, by reason of the want of that power of comprehension which subjects action to the government of moral dominion.

The province of the law making department of governments is to enact those rules of action, declaring "wrongs and their remedies," and in such a general description of legislation, crimes are included for the public security and individual protection.

It therefore becomes of paramount importance that these rules of action, these laws which the citizen is bound to obey, when ordained by the supreme power in a State, should be framed with due regard to the prevention, as well as the punishment of disobedience by the citizen, which in penal laws is crime.

While general laws are more wise than special, yet it may be necessary in an enlightened State to make such provisos, or exceptions in any general code of criminal laws, or crime codes, as to bring within them exceptional cases. The difficult task of the legislator in making such laws is to permit a flexibility to exist in them, that their administration may be adapted to individual cases which so constantly arise.

The suggestions in this paper have been made to this end. They are presented from the single desire to demonstrate how injudicious and unjust, and pre-eminently unphilosophic any rigid system of penal laws must be, that classes all those who disobey them, and are therefore called criminals, as a unit, a class, as a congregation of criminals, to be dealt with by a uniform and unyielding rule, subject to a blind, unintelligent, statutory command which limits the punishment for designated crimes by a maximum and a minimum period of time, without the least regard to the characteristics or individualities of the criminal, or any investigation into the crime cause which subjects him to punishment.

The thoughtful investigator will at once be impressed with the developed need from this line of study of comparing systems of convict punishment, that such a system only is entitled to the approval of enlightened States which addresses itself solely to the individual treatment of each convict, separated entirely from all association or congregation with other convicts. As each convict has his own marked individual characteristics, a distinct individuality, a crime cause individual to him, either inherited, produced by social influences, the results of education, the want of education, the consequence of weakness in moral power to govern his conduct, sudden temptation, or the lack of mental or moral force to regulate physical passions, the absence of comprehension which reasons out effect from causes, or the resisting power which controls the will, so the punishment of such convict while separated from society during his incarceration, should be applied strictly to him individually, separated from all association with those who are under like punishment.

When a State shall thus construct its criminal code, and adopt such a system of convict punishment during imprisonment, then prisons will be establishments to reform offenders, as other public institutions are sustained for the individual benefit of those who are subjected to their care, and for the substantial advantages of society at large.

While it is not even pretended that this paper is exhaustive of any suggestions it contains, it is asserted that enough has been shown to indicate clearly, that crime codes, penal laws, convict punishment and crime-causes are so connected as that legislation which disregards this relation is immature at least, crude and faulty.

Whatever may be thought of this relation, it will not be denied that a system or method of punishment for crime which associates all criminals, and treats them either in classes or in congregation, is less effective for good, less in harmony with its design, less beneficial to the convict and the State, less likely to be remedial or reformatory in its operation on the convict, than a system or method, which discovers the crime-cause by discreet investigations addressed to the convicts' case, his individual character and his personal antecedents, and then so administer those ascertained, remedial or reformatory agencies, that punishment to perfect its object, must apply, the better to secure the results for which it was imposed by society.

While it is most unfortunate that so little attention is given to the science of crime-cause, and its proper or philosophic treatment, or penal laws and convict punishment, it is equally unfortunate that there does not appear an admitted necessity for a qualification only to be derived from such attention, to legislate in the domain of penal jurisprudence.

To pass criminal laws, and to build prisons is not all that should be required of legislation. To subserve the substantial welfare of a State, is to discriminate between violations of its laws, and wisely classify offences and offenders, so that the prompt and fearless administration of justice should not brand with the name of "a convict," all who are amenable to punishment for infractions of these laws.

Young offenders, those who for the first time are charged with offences; those whose crime-cause is easily discovered; those who need reformatory treatment, rather than prison discipline, should not be consigned to a prison or a penitentiary, because the legislation of a State is wholly absorbed in efforts to enhance material interests, which not unfrequently foster social influences which originate causes that impair the moral force of individuals and tend to crime.

As population increases, as ingenuity and invention multiply machines to perform labor, as mechanical industries are largely supplied with artificial means for their productions, as agriculture is now employing mechanism in place of human hands, so that the farm is profit making in proportion as reapers, and mowers, and drills, and cutters banish from the fields laborers who tilled the land, it therefore becomes the duty of enlightened statesmanship to consider what the consequences are to be in the social condition of a people.

Whatever may be the results of this condition, it is apparent that crime-cause must be subjected to careful investigation, and penal laws, and convict punishment are adapted to it.

Trade knowledge, trade education, and legislation that fosters this acquirement must, it would seem, become a necessity. When the statistical tables already presented in these pages, show how many convicts are ignorant of any handicraft skill, they raise the presumption, at least, that the idleness and the want of instruction in mechanical branches of industry which mark the convict, are fruitful causes which develop themselves in violations of laws enacted for the protection of society. How potent in this direction the compression of social forces may be, is yet an unsolved problem. The per centum in these tables, it must be observed, is not based on the whole population or any fraction of it, but on the whole number of persons in populations *convicted* of crime, as found in the institution giving the data. Of so many convicts, the proportion is as stated, and this makes the statements far more impressive.

Our State is divided into agricultural, mining, manufacturing, mixed and municipal communities, and the attention of the student, as well as the legislator is invited to the crime-cause in each, as far as the miserable, wretched apology for statistical information from these districts develop it. When legislation shall enable the department of Internal Affairs of our State to secure properly tabulated statistics, exhaustive and reliable, and furnished by intelligent agents, then this subject will assume its proper position.

There is one reflection which the preparation of this paper has produced, from the want of properly collected statistics under the control of a department of the State, which should not be withheld even at the risk of inviting some animadversion. The legislation of Pennsylvania is so disjointed that it excites well merited criticism. The present Constitution of the State has created a department of the State government which, as its name implies, has official relations with the domestic or internal affairs of the Commonwealth. All the information which public officers, and public institutions, ought to furnish for the use of the departments of the State government and the legislature, should be exclusively within the control of this constitutional power. The records of this "Home office" should give to the student of social science what he needs to test by facts, evolved theories. These records should likewise furnish to the legislator information by which laws could be enacted for the public welfare. Yet such is the lack of careful thought, even a decent regard to the Constitution, or a proper understanding of existing laws, that the duties which the State Constitution intended were to be vested in a department of the State government exclusively, are now partly performed by an association created by law, originated to provide a quiet retreat for pseudo humanitarians, but which arrogates to itself high purposes never realized, pretends to qualifications never possessed, and satisfies its cost by using the labors of public officials, for which they are not remunerated.

That Pennsylvania should longer be content to be so served, and so illy served, in conflict too with the design of its organic law, is only to be explained by the fact, that toleration may be a crime, and its cause indifference to the public weal.

FINANCIAL.

Treasury Department,
Office of Comptroller of the Currency,
Washington, *December* 4, 1876.

Dear Sir :—I have the honor to enclose herewith as requested in your letter of the 15th ult., the following tables :

(1.) Abstract of report made to the Comptroller of the Currency, showing the conditions of the National banks in the State of Pennsylvania and in the cities of Philadelphia and Pittsburg, separately, at the close of business on June 30, and October 2, 1876.

(2.) A list of the National banks in the State of Pennsylvania, with their location, and the amount of capital and circulation, on Oct. 2, 1876.

(3.) Statement of the Comptroller of the Currency, exhibiting the capital, surplus, dividends and earnings of the National banks in the State of Pennsylvania, and in the cities of Philadelphia and Pittsburg.

Very respectfully,

JNO. JAY KNOX,
Comptroller.

W. Hayes Grier, Esq.,
Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

PENNSYLVANIA BANKS.

NAME OF BANK.	Location.	Capital.	Circulation.
First National Bank	Allegheny	$350 000	$315,000
Second do	do	150,000	117,000
Third do	do	200,000	45,000
German do	do	200,000	60,300
First do	Allentown	250,000	135,000
Second do	do	300,000	270,000
Allentown do	do	500,000	450,000
First do	Altoona	150,000	135,000
First do	Ashland	112,500	36,000
Citizens' do	do	60,000	54,000
First do	Athens	100,000	90,000
First do	Bellefonte	100,000	90,000
First do	Berwick	75,000	67,500
First do	Bethlehem	300,000	270,000
Lehigh Valley National Bank	do	300,000	270,000
First do	Birmingham	100,000	90,000
First do	Blairsville	80,000	72,000
First do	Bloomsburg	50,000	45,000
National Bank	Boyertown	100,000	90,000
Farmers' National Bank of Bucks Co.	Bristol	92,220	82,990
First do	Brownsville	75,000	67,500

PENNSYLVANIA.—*Continued.*

NAME OF BANK.	Location.	Capital.	Circulation
Monongahela National Bank	Brownsville	$200,000	$180,000
First do	Butler	100,000	90,000
First do	Carbondale	110,000	45,000
National Bank	Catasauqua	500,000	360,000
Do	Chambersburg	260,000	234,000
First National Bank	Chester	100,000	90,000
Delaware County National Bank	do	300,000	198,000
First do	Clarion	100,000	90,000
First do	Clearfield	100,000	90,000
County do	do	100,000	67,500
National Bank of Chester Valley	Coatesville	200,000	180,000
First National Bank	Columbia	200,000	177,300
Columbia do	do	500,000	270,000
First do	Conneautville	100,000	90,000
First do	Connellsville	50,000	45,000
First do	Conshohocken	150,000	135,000
First do	Corry	100,000	90,000
Corry do	do	100,000	90,000
First do	Danville	150,000	135,000
Danville do	do	200,000	180,000
Downingtown National Bank	Downingtown	100,000	90,000
Doylestown do	Doylestown	105,000	94,500
First do	Easton	400,000	360,000
Easton do	do	500,000	450,000
First do	Erie	150,000	145,500
Second do	do	300,000	260,000
Keystone do	do	250,000	155,600
Marine do	do	150,000	94,500
First do	Franklin	100,000	90,000
First do	Freeport	50,000	27,000
First do	Gettysburg	100,000	90,000
Gettysburg do	do	145,150	130,500
First do	Girard	100,000	90,000
First do	Glen Rock	75,000	67,500
First do	Greencastle	100,000	90,000
First National Bank of West Greenville	Greenville	125,000	94,500
Greenville do	do	110,000	36,200
First do	Hanover	200,000	190,000
Harmony do	Harmony	50,000	45,000
First do	Harrisburg	100,000	90,000
Harrisburg do	do	300,000	270,000
Hatboro' do	Hatboro'	65,000	36,000
First do	Hollidaysburg	50,000	45,000
Honesdale do	Honesdale	300,000	162,000
First do	Honeybrook	100,000	90,000
First do	Huntingdon	150,000	45,000
First do	Indiana	200,000	180,000
Jenkintown National Bank	Jenkintown	70,000	44,500
First do	Johnstown	60,000	54,000
First do	Kittanning	200,000	199,500
National Bank	Kutztown	60,000	50,000
First National Bank	Lancaster	210,000	203,000
Farmers' do	do	450,000	405,000
Lancaster Co. do	do	300,000	270,000
First National Bank	Lansdale	100,000	90,000
First do	Lebanon	50,000	45,000
Lebanon do	do	200,000	180,000
Valley do	do	100,000	90,000
First do	Lehighton	50,000	45,000
Lewisburg do	Lewisburg	100,000	90,000
Union do	do	100,000	90,000
Mifflin Co. do	Lewistown	100,000	90,000
First do	Lock Haven	180,000	162,000
Lock Haven do	do	120,000	72,000
First do	Mahanoy City	80,000	72,000
Manheim do	Manheim	100,000	90,000
First do	Marietta	100,000	99,000

PENNSYLVANIA BANKS—Continued.

NAME OF BANK.	Location.	Capital.	Circulation.
First National Bank	Mauch Chunk	$400,000	$360,000
Second ....do	....do	150,000	135,000
First ....do	M'Keesport	67,000	27,000
First ....do	Meadville	100,000	90,000
Merchants' ...do	....do	100,000	90,000
First ....do	Mechanicsburg	100,000	90,000
Second.......do	....do	50,000	49,500
First ....do	Media	100,000	90,000
First ....do	Mercer	120,000	54,000
Farmers' & Mechanics' National Bank.	....do	80,000	27,000
First..........................do	Meyersdale	50,000	40,500
National Bank	Middletown	100,000	90,000
First National Bank	Mifflinburg	100,000	90,000
First ....do	Millersburg	100,000	90,000
German ......do	Millerstown	50,000	45,000
First ....do	Milton	100,000	89,100
Milton ....do	....do	100,000	90,000
First ....do	Minersville	100,000	90,000
First ....do	Montrose	100,000	81,000
First ....do	Mount Joy	100,000	89,100
Union National Mount Joy Bank	....do	100,000	90,000
First National Bank	Mount Pleasant	150,000	135,000
First ....do	Muncy	100,000	85,950
National Bank of Beaver Co	New Brighton	200,000	108,000
First National Bank	New Castle	150,000	135,000
National Bank of Lawrence Co	....do	150,000	135,000
First National Bank	Newtown	100,000	90,000
First ....do	Newville	100,000	90,000
First ....do	Norristown	150,000	135,000
Montgomery..do	....do	400,000	360,000
First ....do	North East	50,000	45,000
First ....do	Northumberland	100,000	45,000
First ....do	Oil City	200,000	180,000
National Bank	Oxford	125,000	112,500
Farmers' National Bank	Pennsburg	90,000	63,000
Perkiomen.......do	....do	100,000	90,000
First ....do	Philadelphia	1,000,000	799,800
Second..........do	....do	300,000	250,000
Third ....do	....do	300,000	260,580
Sixth............do	....do	150,000	135,000
Seventh ....do	....do	250,000	219,000
Eighth..........do	....do	275,000	247,500
Bank of North America	....do	1,000,000	800,000
Centennial National Bank	....do	300,000	45,000
Central...........do	....do	750,000	600,000
City ....do	....do	400,000	360,000
Commercial National Bank of Pa	....do	810,000	630,000
Commonwealth National Bank	....do	260,000	213,300
Consolidation..........do	....do	300,000	270,000
Corn Exchange.........do	....do	500,000	271,000
Farmers' & Mechanics'..do	....do	2,000,000	1,000,000
Girard..................do	....do	1,000,000	600,000
Kensington ....do	....do	250,000	225,000
Keystone ....do	....do	200,000	67,500
Manufacturers' ....do	....do	1,000,000	546,120
Mechanics'.............do	....do	800,000	170,650
National Bank of Commerce	....do	250,000	217,250
National Bank of Germantown	....do	200,000	180,000
National Bank of the Northern Liberties	....do	500,000	450,000
National Bank of the Republic	....do	800,000	630,000
National Security Bank	....do	250,000	180,000
Penn National Bank	....do	500,000	225,000
Philadelphia National Bank	....do	1,500,000	720,000
Southwark ....do	....do	250,000	161,600
Tradesmen's.........do	....do	200,000	180,000
Union ....do	....do	500,000	90,000

PENNSYLVANIA BANKS—CONTINUED.

NAME OF BANK.	Location.	Capital.	Circulation.
Western National Bank	Philadelphia	$400,000	$216,000
Farmers' & Mechanics' National Bank.	Phœnixville	150,000	135,000
National Bank	do	200,000	180,000
First National Bank	Pittsburgh	750,000	90,000
Second do	do	300,000	90,000
Third do	do	500,000	364,000
Fourth do	do	300,000	270,000
Fifth do	do	100,000	90,000
Allegheny do	do	500,000	180,000
Citizens' do	do	800,000	462,600
City do	do	200,000	45,000
Diamond do	do	200,000	45,000
Duquesne do	do	160,000	45,000
Exchange do	do	1,700,000	631,800
Farmers' Deposit National Bank	do	300,000	90,000
German do	do	250,000	225,000
Iron City do	do	400,000	360,000
Marine do	do	200,000	45,000
Mechanics' do	do	500,000	447,750
Merchants' & Manufacturers' National Bank	do	800,000	360,000
Metropolitan National Bank	do	200,000	67,500
Peoples' do	do	1,000,000	800,000
Pittsburgh do	do	500,000	450,000
Smithfield do	do	200,000	45,000
Tradesmen's do	do	400,000	225,000
Union do	do	250,000	218,700
First do	Pittston	500,000	450,000
First do	Plymouth	100,000	90,000
National Bank	Pottstown	300,000	270,000
Government National Bank	Pottsville	500,000	450,000
Miners' do	do	500,000	360,000
Pennsylvania do	do	200,000	180,000
First do	Reading	100,000	86,995
Farmers' do	do	400,020	360,000
National Union Bank	do	200,000	135,000
National Bank	Schwenksville	100,000	89,980
First National Bank	Scranton	200,000	45,000
Second do	do	300,000	199,970
Third do	do	200,000	45,000
First do	Selins Grove	100,000	90,000
Northumberland Co. National Bank	Shamokin	67,000	60,300
First do.	Sharon	125,000	105,060
Sharon do.	do	200,000	45,000
First do.	Shippensburg	75,000	45,000
National Bank	Slatington	50,000	45,000
Union National Bank	Souderton	90,000	54,000
National Bank	Spring City	150,000	128,900
First National Bank	Strasburg	100,000	99,000
First do	Sunbury	200,000	180,000
First do	Susquehanna Depot	100,000	90,000
First do	Tamaqua	150,000	135,000
First do	Tarentum	50,000	45,000
Second do	Titusville	300,000	270,000
First do	Towanda	125,000	49,500
Citizens' do	do	120,000	45,000
First do	Tremont	100,000	85,000
Wyoming do	Tunkhannock	100,000	90,000
First National Bank of Union Mills	Union City	50,000	45,000
First National Bank	Uniontown	100,000	90,000
National Bank of Fayette Co	do	100,000	90,000
First National Bank	Warren	100,000	90,000
Citizens' do	do	50,000	27,000
First do	Washington	150,000	135,000
First do	Waynesboro'	75,000	67,500
Farmers' & Drovers' National Bank	Waynesburg	150,000	90,000
First do	Wellsborough	100,000	90,000

PENNSYLVANIA BANKS—CONTINUED.

NAME OF BANK.	Location.	Capital.	Circulation.
First National Bank	West Chester	$200,000	$180,000
National Bank of Chester Co	do	225,000	202,500
First National Bank	Wilkesbarre	375,000	337,500
Second do	do	450,000	200,000
Wyoming do	do	150,000	135,000
First do	Williamsport	284,950	237,220
City do	do	100,000	45,000
Lumbermen's National Bank	do	100,000	85,000
Lycoming do	do	100,000	30,600
West Branch do	do	100,000	90,000
Williamsport do	do	100,000	90,000
First do	Wrightsville	150,000	135,000
First do	York	300,000	299,950
Farmers' do	do	200,000	180,900
Western do	do	100,000	90,000
York do	do	500,000	450,000
York Co do	do	300,000	269,900

Abstract *of reports made to the Comptroller of the Currency, showing the condition of the National banks in the State of Pennsylvania, at the close of business on Friday, the 30th day of June,* 1876.

RESOURCES.

Loans on discounts	$49,991,019	81
Overdrafts	285,426	13
U. S. bonds to secure circulation	25,475,150	00
U. S. bonds to secure deposits	680,000	00
U. S. bonds on hand	513,350	00
Other stocks, bonds and mortgages	2,414,985	07
Due from approved reserve agents	6,471,002	51
Due from other National banks	1,931,810	35
Due from State banks and bankers	1,012,622	33
Real estate, furniture and fixtures	2,650,959	60
Current expenses and taxes paid	334,751	97
Premiums paid	600,568	84
Checks and other cash items	539,949	37
Bills of other National banks	1,073,971	00
Fractional currency	140,458	65
Specie	124,898	19
Legal tender notes	3,818,009	00
U. S. certificates of deposit for legal tender notes	115,000	00
Five per cent. redemption fund	1,148,295	10
Due from U. S. Treasurer	87,027	27
	99,409,255	19

LIABILITIES.

Capital stock paid in	$29,332,305	00
Surplus fund	7,728,954	60
Other undivided profits	2,014,140	12
National bank notes outstanding	23,227,244	00
State bank notes outstanding	72,443	00
Dividends unpaid	219,301	06
Individual deposits	33,121,380	02
United States deposits	418,824	35
Deposits of U. S. disbursing officers	11,784	44
Due to other National banks	2,333,190	19
Due to State banks and bankers	568,347	57
Notes and bills re-discounted	291,740	53
Bills payable	69,600	31
	99,409,255	19

Number of banks, 181.

ABSTRACT *of reports made to the Comptroller of the Currency, showing the condition of the National Banks in the State of Pennsylvania, at the close of business on Monday, the 2d day of October,* 1876.

RESOURCES.

Loans on discounts	$50,211,932	12
Overdrafts	301,345	84
U. S. bonds to secure circulation	26,905,000	00
U. S. bonds to secure deposits	680,000	00
U. S. bonds on hand	718,300	00
Other stocks, bonds and mortgages	2,626,187	55
Due from approved reserve agents	4,689,830	22
Due from other National banks	1,862,851	55
Due from State banks and bankers	945,246	22
Real estate, furniture and fixtures	2,698,972	65
Current expenses and taxes paid	549,411	10
Premiums paid	662,984	09
Checks and other cash items	632,565	36
Bills of other National banks	860,107	00
Fractional currency	107,544	65
Specie	167,765	52
Legal tender notes	3,585,311	00
U. S. certificates of deposit for legal tender notes	115,000	00
Five per cent. redemption fund	4,164,217	66
Due from U. S. Treasurer	61,060	79
	99,545,633	32

LIABILITIES.

Capital stock paid in	$29,863,840	00
Surplus fund	7,761,746	15
Other undivided profits	2,473,541	45
National bank notes outstanding	23,675,491	00
State bank notes outstanding	70,572	00
Dividends unpaid	96,137	93
Individual deposits	33,093,035	89
United States deposits	337,627	61
Deposits of U. S. disbursing officers	9,801	26
Due to other National banks	1,419,173	05
Due to State banks and bankers	426,227	42
Notes and bills re-discounted	302,023	25
Bills payable	16,416	31
	99,545,633	32

Number of banks, 183.

ABSTRACT *of reports made to the Comptroller of the Currency, showing the condition of the National Banks in the city of Pittsburg, at the close of business on Friday, the 30th day of June,* 1876.

RESOURCES.

Loans and discounts	$18,233,170	98
Overdrafts	41,084	23
U. S. bonds to secure circulation	6,494,500	00
U. S. bonds to secure deposits	50,000	00
U. S. bonds on hand	876,700	00
Other stocks, bonds and mortgages	4,392,238	48
Due from approved reserve agents	1,816,435	14
Due from other National banks	755,391	62
Due from State banks and bankers	164,120	40
Real estate, furniture and fixtures	1,202,545	97
Current expenses and taxes paid	87,934	73
Premiums paid	194,347	76
Checks and other cash items	179,688	66
Exchanges for clearing-house	449,521	51
Bills of other National banks	418,402	00
Fractional currency	30,528	26
Specie	61,802	44
Legal tender notes	2,421,701	00
U. S. certificates of deposit for legal tender notes	100,000	00
Five per cent. redemption fund	291,367	50
Due from U. S Treasurer	38,510	00
	34,346,990	68

LIABILITIES.

Capital stock paid in	$10,510,000 00
Surplus fund	3,044,295 43
Other undivided profits	590,757 55
National bank notes outstanding	5,715,337 00
State bank notes outstanding	6,098 00
Dividends unpaid	82,433 75
Individual deposits	11,674,436 72
United States deposits	40,000 00
Due to other National banks	1,104,257 73
Due to State banks and bankers	1,565,187 09
Notes and bills re-discounted	14,187 41
	34,346,990 68

Number of banks, 23.

Abstract *of reports made to the Comptroller of the Currency, showing the condition of the National Banks in the city of Pittsburg at the close of business on Monday, the 2d day of October,* 1876.

RESOURCES.

Loans and discounts	$17,765,651 25
Overdrafts	56,073 09
United States bonds to secure circulation	6,294,500 00
United States bonds to secure deposits	150,000 00
United States bonds on hand	966,350 00
Other stocks, bonds and mortgages	478,520 73
Due from approved reserve agents	2,120,525 24
Due from National banks	991,374 95
Due from State banks and bankers	276,424 31
Real estate, furniture and fixtures	1,224,739 00
Current expenses and taxes paid	201,897 76
Premiums paid	164,801 61
Checks and other cash items	157,001 15
Exchanges for clearing-house	552,496 22
Bills of other National banks	389,101 00
Fractional currency	27,137 80
Specie	89,021 49
Legal tender notes	2,853,922 00
United States certificates of deposit for legal tender notes,	100,000 00
Five per cent. redemption fund	282,367 50
Due from United States Treasurer	94,200 70
	35,236,105 80

LIABILITIES.

Capital stock paid in	$10,510,000	00
Surplus fund	3,037,954	92
Other undivided profits	680,824	83
National bank notes outstanding	5,517,990	00
State bank notes outstanding	6,098	00
Dividends unpaid	67,892	75
Individual deposits	12,719,206	26
United States deposits	131,319	57
Deposits of United States disbursing officers	125,645	88
Due to other National banks	1,184,458	33
Due to State banks and bankers	1,194,715	26
Bills payable	60,000	00
	35,236,105	80

Number of banks, 23.

ABSTRACT *of reports made to the Comptroller of the Currency, showing the condition of the National banks in the city of Philadelphia, at the close of business on Friday, the 30th day of June,* 1876.

RESOURCES.

Loans and discounts	$48,664,287	64
Overdrafts	18,327	57
U. S. bonds to secure circulation	12,394,200	00
U. S. bonds to secure deposits	200,000	00
U. S. bonds on hand	441,300	00
Other stocks, bonds, and mortgages	2,026,843	86
Due from approved reserve agents	4,058,926	25
Due from other national banks	2,999,082	48
Due from State banks and bankers	659,953	63
Real estate, furniture, and fixtures	2,490,891	21
Current expenses and taxes paid	252,258	24
Premiums paid	168,792	19
Checks and other cash items	438,210	98
Exchanges for clearing house	6,064,341	23
Bills of other national banks	1,902,176	00
Fractional currency	323,906	96
Specie	685,443	17
Legal tender notes	8,274,347	00
U. S. certificates of deposit for legal tender notes	3,430,000	00
Five per cent. redemption fund	548,552	50
Due from U. S. Treasurer	178,309	00
	96,220,149	91

LIABILITIES.

Capital stock paid in	$17,045,000 00
Surplus fund	7,442,754 32
Other undivided profits	1,357,578 91
National bank notes outstanding	10,661,312 00
State bank notes outstanding	23,629 00
Dividends unpaid	62,980 75
Individual deposits	47,487,226 47
United States deposits	176,966 56
Due to other national banks	9,262,836 60
Due to State banks and bankers	2,639,865 30
Bills payable	60,000 00
	96,220,149 91

Number of banks, 31.

ABSTRACT *of Reports made to the Comptroller of the Currency, showing the condition of the National banks in the city of Philadelphia, at the close of business on Monday, the 2d day of October,* 1876.

RESOURCES.

Loans and discounts	$47,883,600 69
Overdrafts	12,209 97
U. S. bonds to secure circulation	12,383,700 00
U. S. bonds to secure deposits	250,000 00
U. S. bonds on hand	1,307,900 00
Other stocks bonds and mortgages	2,185,103 22
Due from approved reserve agents	4,505,830 63
Due from other National banks	3,027,114 60
Due from State banks and bankers	771,459 77
Real estate, furniture and fixtures	2,499,081 94
Current expenses and taxes paid	601,762 70
Premiums paid	314,962 50
Checks and other cash items	521,755 20
Exchanges for clearing-house	9,995,258 70
Bills of other National banks	1,689,550 00
Fractional currency	201,329 98
Specie	790,758 50
Legal tender notes	8,857,810 00
U. S. certificates of deposits for legal tender notes	3,290,000 00
Five per cent. redemption notes	550,352 50
Due from U. S. Treasurer	287,910 59
	101,927,451 49

LIABILITIES.

Capital stock paid in	$17,195,000 00
Surplus fund	7,439,695 43
Other undivided profits	1,872,308 81
National bank notes oustanding	10,501,069 00
State bank notes outstanding	23,557 00
Dividends unpaid	45,872 25
Individual deposits	51,938,420 34
United States deposits	164,103 12
Due to other National banks	10,001,492 27
Due to State banks and bankers	2,685,933 27
Bills payable	60,000 00
	101,927,451 49

Number of banks, 31.

DIVIDENDS *and earnings of the National Banks in the State of Pennsylvania, and of those in Philadelphia and Pittsburg, with their ratios to capital and surplus fund, semi-annually, from March* 1, 1869, *to September* 1, 1876, *as reported to the Comptroller of the Currency.*

	No. of banks..	Capital stock.	Surplus.	Dividends.	Net earnings.	RATIOS.		
						Dividends to capital.	Dividends to capital and surplus	Earnings to capital and surplus.
*Pennsylvania, for 6 months ending								
August 31, 1869	146	$23,355,020 00	$4,810,860 00	$1,296,060 00	$1,709,036 00	5.55	4.60	6.07
February 28, 1870	149	23,905,240 00	4,974,496 00	1,331,635 00	1,811,543 00	5.57	4.61	6.27
August 31, 1870	149	23,920,240 00	5,370,668 00	1,334,560 00	1,566,199 00	5.58	4.55	5.35
February 28, 1871	151	24,205,240 00	5,577,481 00	1,293,860 00	1,424,050 00	5.35	4.34	4.78
August 31, 1871	151	24,545,240 00	5,781,467 00	1,284,381 00	1,568,270 00	5.23	4.24	5.17
February 28, 1872	153	25,255,240 00	5,998,420 00	1,353,347 00	1,638,464 00	5.36	4.33	5.24
August 31, 1872	155	26,575,090 00	6,359,964 00	1,332,980 00	1,612,149 00	5.21	4.17	5.05
March 1, 1873	157	27,125,240 00	6,670,671 00	1,360,783 00	1,781,134 00	5.02	4.03	5.27
September 1, 1873	158	26,660,580 00	7,019,439 00	1,384,980 00	1,841,315 00	5.19	4.11	5.47
March 1, 1874	157	26,775,240 00	7,207,493 00	1,276,651 00	1,698,259 00	4.77	3.76	5.00
September 1, 1874	156	26,761,590 00	7,435,885 00	1,365,441 00	1,574,945 00	5.10	3.99	4.61
March 1, 1875	159	27,075,240 00	7,577,135 00	1,340,510 00	1,495,391 00	4.95	3.87	4.32
September 1, 1875	162	27,625,240 00	7,643,549 00	1,385,087 20	1,433,186 00	5.01	3.93	4.06
March 1, 1876	177	29,340,360 00	7,788,046 00	1,389,999 00	1,600,366 00	4.74	3.74	4.31
September 1, 1876	178	28,593,940 00	7,745,661 00	1,349,317 00	1,273,834 00	4.72	3.71	3.51
Philadelphia, for six months ending								
August 31, 1869	28	16,092,150 00	6,158,302 00	979,607 00	1,178,241 00	6.09	4.40	5.29
February 28, 1870	29	16,355,150 00	6,197,217 00	978,758 00	1,150,597 00	5.98	4.34	5.10
August 31, 1870	29	16,255,150 00	6,498,576 00	942,058 00	1,062,048 00	5.79	4.14	4.67
February 28, 1871	29	16,255,150 00	6,537,247 00	957,258 00	1,000,230 00	5.90	4.20	4.39
August 31, 1871	30	16,480,150 00	6,704,033 00	942,758 00	1,023,270 00	5.70	4.06	4.41
February 28, 1872	30	16,935,000 00	6,804,709 00	971,750 00	1,088,461 00	5.74	4.09	4.59
August 31, 1872	29	16,735,000 00	6,821,824 00	964,250 00	1,081,428 00	5.76	4.09	4.59
March 1, 1873	29	16,735,000 00	6,916,170 00	975,930 00	1,095,087 00	5.83	4.13	4.63
September 1, 1873	29	16,935,000 00	7,064,979 00	983,250 00	1,127,495 00	5.81	4.09	4.70
March 1, 1874	29	16,935,000 00	7,105,792 00	972 250 00	1,035,211 00	5.74	4.04	4.31

DIVIDENDS AND EARNINGS—CONTINUED.

	No. of banks..	Capital stock.	Surplus.	Dividends.	Net *earnings.	RATIOS.		
						Dividends to capital.	Dividends to capital and surplus	Earnings to capital and surplus.
September 1, 1874	29	$16,935,000 00	$7,189,152 00	$970,500 00	$1,079,687 00	5.73	4.02	4.48
March 1, 1875	29	16,935,000 00	7,189,641 00	982,572 00	1,004,393 00	5.80	4.07	4.16
September 1, 1875	29	16,935,000 00	7,335,957 00	924,000 00	953,885 00	5.46	3.81	3.93
March 1, 1876	30	17,135,000 00	7,404,982 00	919,680 00	1,029,843 00	5.37	3.75	4.20
September 1, 1876	31	17,045,000 00	7,444,223 00	914,500 00	1,032,570 00	5.37	3.73	4.22
Pittsburg, for 6 months ending								
August 31, 1869	15	8,700,000 00	2,086,777 00	479,500 00	626,066 00	5.51	4.44	5.80
February 28, 1870	15	8,700,000 00	2,171,125 00	447,500 00	561,630 00	5.14	4.12	5.17
August 31, 1870	16	9,000,000 00	2,235,774 00	464,500 00	575,889 00	5.16	4.13	5.13
February 28, 1871	16	9,000,000 00	2,297,158 00	463,500 00	561,177 00	5.15	4.10	4.97
August 31, 1871	16	9,000,000 00	2,415,177 00	482,000 00	552,755 00	5.36	4.22	4.84
February 28, 1872	16	9,000,000 00	2,481,622 00	487,000 00	557,482 00	5.41	4.24	4.86
August 31, 1872	16	9,000,000 00	2,570,277 00	479,000 00	576,970 00	5.32	4.14	4.99
March 1, 1873	16	9,000,000 00	2,595,443 00	498,000 00	512,236 00	5.53	4.30	4.42
September 1, 1873	16	9,000,000 00	2,950,741 00	503,000 00	658,449 00	5.59	4.21	5 51
March 1, 1874	16	9,000,000 00	2,983,604 00	459,000 00	524,024 00	5.10	3.83	4.37
September 1, 1874	16	9,000,000 00	3,055,928 00	489,000 00	605,004 00	5.43	4.06	5.02
March 1, 1875	16	9,000,000 00	3,093,585 00	471,000 00	530,426 00	5.23	3.89	4.39
September 1, 1875	19	9,710,000 00	2,898,238 00	466,750 00	540,669 00	4.81	3.70	4.29
March 1, 1876	23	10,530,000 00	2,936,881 00	462,000 00	532,046 00	4.39	3.43	3.95
September 1, 1876	23	10,510,000 00	3,034,992 00	445,000 00	462,363 00	4.23	3.28	3.41

* Exclusive of the banks in Philadelphia and Pittsburg.

REVENUE OF THE COMMONWELATH OF PENNSYLVANIA.

SUMMARY *of the receipts at the State Treasury from the* 1*st day of December*, 1875, *to the* 30*th day of November*, 1876, *both days inclusive.*

1.	Lands	$4,088 47
2.	Auction commissions	16,606 93
3.	Notary public commissions	11,975 00
4.	Tax on bank stock	202,747 62
5.	Tax on corporation stocks	2,148,252 46
6.	Tax on personal property	530,808 83
7.	Tax on loans	106,786 47
8.	Tax on net earnings or income	49,212 52
9.	Tax on gross receipts	2,665 80
10.	Tax on logs	1,000 00
11.	Tax on tonnage	159 76
12.	Tax on coal companies	521,005 72
13.	Commutation of tonnage tax	460,000 00
14.	Tax on writs, wills, deeds, &c	147,446 78
15.	Tax on certain offices	11,299 96
16.	Collateral inheritance tax	350,028 58
17.	Tavern licenses	482,725 61
18.	Retailers' licenses	360,614 65
19.	Theatre, circus and menagerie licenses,	947 65
20.	Billiard room, bowling saloon and ten pin alley licenses	10,773 61
21.	Eating house, beer house and restaurant licenses	51,061 89
22.	Peddlers' licenses	1,363 93
23.	Brokers' licenses	9,063 09
24.	Patent medicine licenses	8,525 76
25.	Drovers' licenses	50 00
26.	Millers' licenses	1,476 77
27.	Distillers' and brewers' licenses	9,152 72
28.	Foreign insurance companies	146,884 60
29.	Bonus on charters	35,133 18
30.	Pamphlet laws	531 00
31.	Escheats	1,429 88
32	Annuity for right of way	10,000 00
33.	Fees of the public offices	24,111 23
34.	Allegheny Valley railroad company, interest on bonds	252,500 00

35. Allegheny Valley railroad bonds redeemed	$100,000 00	
36. Pennsylvania archives	172 20	
37. Geological survey	463 63	
38. Accrued interest	7,784 07	
39. Tax on enrollment of laws	40 00	
		$6,078,870 37

EXPENDITURES OF THE COMMONWEALTH OF PENNSYLVANIA.

SUMMARY *of the payments at the State Treasury from the* 1*st day of December*, 1875, *to the* 30*th day of November*, 1876, *both days inclusive.*

1. Expenses of government	$1,270,657 47
2. Constitutional Convention	173 12
3. Riots in the anthracite coal regions	85,231 50
4. Susquehanna Depot riots	485 53
5. Pensions and gratuities	34,519 71
6. Charitable institutions	523,401 39
7. Soldiers' orphan schools	393,317 63
8. Common schools	1,114,989 68
9. Commissioners of Sinking Fund	296,807 88
10. Interest on loans	1,326,489 15
11. Mechanics' High School of Pennsylvania	546 10
12. Harbor Master, Philadelphia	3,124 99
13. Port Warden, Philadelphia	2,083 31
14. Inspectors of coal mines	25,166 23
15. State Library	6,865 31
16. Board of Pardons	2,794 23
17. Assessors of bank stocks	16,367 32
18. Mercantile appraisers	2,788 10
19. Stationery, fuel, &c	28,809 54
20. Special commissions	17,452 44
21. Advertising for proposals	11,385 10
22. Escheats	1,946 18
23. Centennial Exposition	329,655 17
24. Pennsylvania Board of Centennial Managers	30,284 04
25. Houses of Refuge	47,250 00
26. Penitentiaries	71,338 75

27. Geological Survey	$50,000 00	
28. Counsel fees and commissions	2,050 00	
29. Board of Public Charities	7,800 00	
30. Pennsylvania Agricultural Society	2,000 00	
31. Inaugural expenses	4,257 50	
32. Public buildings and grounds	114,469 26	
33. Miscellaneous	14,086 20	
34. Militia expenses, ordinary	227,655 64	
35. Military expenses, per act of April, 16, 1862	169 20	
36. Centennial military encampment	20,672 35	
		$6,087,100 02

RECAPITULATION

Of Monthly Receipts and Expenditures.

RECEIPTS.		EXPENDITURES.	
December, 1875	$429,504 83	December, 1875	$182,314 85
January...1876	595,210 78	January...1876	884,039 81
February...do	625,317 04	February...do	316,950 28
March.....do	479,941 13	March.....do	484,485 12
April......do	558,288 09	April......do	426,206 36
May.......do	470,160 76	May.......do	640,696 28
June......do	289,970 40	June......do	357,282 34
July.......do	852,112 47	July.......do	887,370 44
August....do	873,083 64	August....do	696,966 52
September..do	225,833 26	September..do	407,903 27
October....do	319,379 63	October....do	435,729 71
November..do	360,088 34	November..do	367,155 04
	6,078,890 37		6,087,100 02

PUBLIC DEBT.

Statement *showing the indebtedness of the Commonwealth of Pennsylvania on the first of December,* 1876.

Funded debt, viz:		
6 per cent. loans	$17,466,880 00	
5...do.....do	4,811,141 58	
4½..do.....do	87,000 00	
6 per cent. Agricultural Land Scrip bonds	500,000 00	
		$22,865,021 58

Unfunded debt, viz:		
Relief notes in circulation	$96,182 00	
Interest certificates outstanding,	13,038 54	
Do. unclaimed	4,448 38	
Domestic creditors' certificates,	25 00	
Chambersburg certificates, outstanding	90 59	
Chambersburg certificates, unclaimed	144 60	
		113,929 11
Public debt, December 1, 1876		22,978,950 69

Public debt as it stood December 1, 1875		$23,233,137 74
Amount of debt redeemed at the State Treasury during the fiscal year ending November 30, 1876, viz:		
6 per cent. loans	$186,500 00	
5 do do	58,100 00	
Chambersburg certificates, act May 27, 1871	9,585 05	
Relief notes—Exchange Bank, Pittsburg	2 00	
		254,187 05
Public debt, December 1, 1876		22,978,950 69

INSURANCE.

During the year 1875, the citizens of Pennsylvania paid in premiums for fire, marine, life, and accident insurance, a sum of money aggregating $15,802,164 55, as shown by the following summary taken from the report of Mr. J. M. Forster, Insurance Commissioner of the State of Pennsylvania:

Premium receipts of Pennsylvania Life Companies from business in the State		$1,770,285 35
Premium receipts of Life Companies of other States from business in Pennsylvania		5,407,403 87
Total premium receipts of Life Companies in Pennsylvania.		$7,177,689 22
Premium receipts of Pennsylvania Stock, Fire, and Marine Companies of the State,	$3,560,611 25	
Receipts of Pennsylvania Mutual Companies from policies and assessments in the State	1,383,752 83	
Total receipts of Pennsylvania Companies in the State		$4,944,364 08
Premium receipts of Foreign Fire and Marine Companies,		3,680,111 25
Total paid for insurance in Pennsylvania in 1875		$15,802,164 55

Total amount paid in 1874	$16,198,875 73
Total amount paid in 1875	15,802,164 55
Decrease in 1875	$396,711 18

BUSINESS IN PENNSYLVANIA.

The business of insurance during the year 1875, in the State of Pennsylvania, is summed up as follows:

Premiums received by stock companies	$7,240,722 50
Premiums and assessments by mutual companies	1,383,752 83
Total Pennsylvania business	$8,624,475 33
Losses paid by stock companies	$4,037,957 30
Losses paid by mutual companies	987,085 95
Total losses paid in Pennsylvania	$5,025,043 25

This shows a decrease of $548,300 36 in premiums, and an increase of $1,175,738 25 in losses, in the entire business in this State during the year 1875, when compared with the business of 1874. Ratio of losses paid to income from premiums and assessments on entire Pennsylvania business, 58.26 per cent.

Premiums received by Pennsylvania life companies......	$1,770,285 35
Premiums received by life companies of other States....	5,407,403 87
Total of Pennsylvania business..................	7,177,689 22
Losses paid by Pennsylvania life companies............	$601,396 00
Losses paid by life companies of other States...........	2,609,897 00
Total losses paid in Pennsylvania................	3,211,293 00

Ratio of losses paid to income from premiums on entire Pennsylvania business, 44.74 per cent.

BUSINESS OF PENNSYLVANIA COMPANIES.

The business of Pennsylvania joint stock insurance companies during the year 1875, is represented by the following figures:

Income from fire premiums..........................		$7,668,633 32
Income from marine and inland premiums.............		2,412,106 37
Total premium income..........................		10,080,739 69
Paid for fire losses.....................	$4,047,578 24	
Paid for marine and inland losses........	1,851,511 34	
Paid for commissions..................	1,170,559 97	
Paid for salaries	843,806 32	
Paid for taxes.........................	286,535 93	
Paid for miscellaneous................	631,788 68	
		8,831,780 48
Excess of premium income over expenses..........		$1,248,959 21
Income from investments..............	$1,491,815 46	
Income from rents......................	37,385 95	
Income from miscellaneous sources......	115,079 03	
		1,644,280 44
Total net income.................................		2,893,239 65
Deduct dividends..............................		1,141,968 32
Excess of income over all expenditures...............		$1,751,271 33
Ratio of losses paid to premium income................		58.52
Ratio of expenses to premium income..................		29.09
Ratio of profit to premium income....................		12.39

MUTUAL FIRE INSURANCE COMPANIES.

The business of the mutual insurance companies for the year 1875, shows the following cash results:

Receipts from policies	$1,246,602 04
Receipts from assessments	695,505 64
Receipts from miscellaneous sources	379,239 96
Total cash receipts	2,321,347 64
Paid for losses	$1,369,170 07
Cash returned to members	73,245 66
Paid for salaries and expenses	591,321 21
Total cash disbursements	2,033,736 94

PENNSYLVANIA LIFE INSURANCE COMPANIES.

The following statement shows the income and expenditures of life insurance companies of this State for the year ending December 31, 1875:

INCOME.

Premiums, less amount paid for re-insurance	$2,892,208 81
Interest, discount and rent	1,044,284 67
All other sources	204,197 01
Total income	4,140,690 49

EXPENDITURES.

To policy holders:	Losses and matured endowments	$1,082,940 41
	Dividends and other expenditures	946,545 48
Total payments to policy holders		$2,029,485 89
Dividends to stockholders		60,005 80
Expenses of management		784,027 94
Total expenditures		2,873,519 63
Total excess of income over expenditures		$1,267,170 86

CO-OPERATIVE LIFE INSURANCE COMPANIES.

Condition and business of Pennsylvania co-operative life insurance companies for 1875 :

Cash assets	$280,958 17
Cash liabilities	1,163,270 40
Cash income	437,519 58
Cash expenditures	409,105 30
Number of classes	21
Number of members at beginning of year	15,224
Number of members at close of year	17,633
Number of members died during year	194
Amount paid to representatives of deceased members	$285,579 44
Number of policies forfeited	1,207
Amount of money forfeited to companies	$8,568 31
Number of co-operative companies in the State	12

BUSINESS OF 1875.

Summary *of risks written, premiums and assessments received and losses paid by fire, and inland and marine insurance companies lawfully doing business in Pennsylvania during the year* 1875.

	RISKS WRITTEN.		Premiums received.	Losses paid.	Ratio of losses paid to premiums received.
	Fire.	Marine and Inland.			
Pennsylvania joint stock companies	$644,643,451	$240,041,080	$10,080,739 60	$5,899,089 58	58.51
Companies from other States	3,959,994,105	313,529,562	42,758,610 10	22,038,819 66	51.54
Foreign companies—United States branches	1,136,916,239	18,257,817	10,957,671 46	4,586,909 26	41.86
Total	5,741,553,795	571,828,459	63,797,021 25	32,524,818 50	50.82

	Fire risks.	RECEIPTS.		Losses paid.	Ratio of losses paid to premiums and assessments rec'd.
		From assessments.	From policies.		
Pennsylvania mutual companies	$134,077,356	$695,505 64	$1,246,602 04	$1,369,107 07	70.49

RISKS IN FORCE DECEMBER 31, 1875.

Pennsylvania joint-stock fire companies	$890,408,550
Pennsylvania mutual fire companies	522,183,951
Other State joint-stock fire companies	3,631,807,195
American branches foreign fire companies	908,596,622
Total	5,952,996,318

Pennsylvania joint-stock inland and marine companies	$25,066,219
Other State joint-stock inland and marine companies	24,016,551
American branches foreign marine and inland companies	1,203,259
Total	50,286,029

SUMMARY of total business done in 1875 by Pennsylvania Life Insurance Companies, and Life Insurance Companies of other States.

	POLICIES IN FORCE DECEMBER 31, 1875.		POLICIES ISSUED DURING THE YEAR.		Premiums received during the year.	Losses and claims during the year.
	No.	Amount.	No.	Amount.		
Pennsylvania companies	31,240	$79,191,950	5,667	$14,152,666	$2,892,208 61	$1,082,940 41
Companies of other States	767,491	1,890,227,308	131,489	319,280,968	83,422,594 96	27,262,645 02
Total	798,731	1,969,419,258	137,156	333,433,634	86,314,803 57	28,345,585 43

CONDITION OF INSURANCE COMPANIES DOING BUSINESS IN PENNSYLVANIA.

JOINT-STOCK AND MUTUAL FIRE AND FIRE MARINE COMPANIES.

	ASSETS.	LIABILITIES.				INCOME.	EXPENDITURES.
		Liabilities except paid up capital and net surplus.	Paid up capital.	Net surplus.	Total liabilities.		
Pennsylvania Joint-stock Fire and Fire Marine companies	$29,225,685 10	$12,910,555 76	$9,684,513 50	$6,700,156 45	$29,295,225 71	$11,725,020 13	$9,973,748 80
Pennsylvania Mutual Fire companies	5,509,500 08	1,896,999 55	....	....	1,896,999 55	2,321,347 64	2,033,736 94
Other State Joint-stock Fire and Fire Marine companies	90,682,308 92	27,865,320 22	44,035,050 50	18,788,902 46	90,689,273 18	47,653,342 59	41,610,739 55
American branches Foreign Fire and Fire Marine companies	16,574,590 74	7,388,201 13	....	....	7,388,201 13	11,456,725 30	7,906,556 08
Totals	141,992,084 84	50,061,076 66	53,719,544 00	25,489,058 91	129,269,699 57	73,156,435 66	61,524,781 37

LIFE AND ACCIDENT INSURANCE COMPANIES.

	Total admitted assets.	Liabilities except surplus and capital stock.	Surplus as regards policy holders.	Capital stock.	Income.	Expenditures
Pennsylvania Life Insurance companies	$16,530,703 54	$12,491,274 03	$4,039,429 51	$1,891,505 21	$4,140,690 29	$2,873,519 63
Life Insurance companies of other States	397,988,614 15	338,975,151 30	59,013,462 85	5,413,311 11	107,769,269 68	79,792,729 89
Accident companies	1,843,529 29	326,091 30	1,517,437 99	1,100,000 00	899,922 86	790,389 03
Totals	414,362,846 98	351,792,516 63	64,570,330 35	8,404,816 32	112,809,882 83	83,456,638 55

AMONG THE INDUSTRIES OF CENTRAL, WESTERN AND NORTH-WESTERN PENNSYLVANIA.

The Pennsylvania railroad between Harrisburg, on the Susquehanna, and Pittsburg, at the junction of the Allegheny and the Monongahela, passes through and touches the following counties, viz: Dauphin, Perry, Juniata, Mifflin, Huntingdon, Blair, Cambria, Indiana, Westmoreland and Allegheny. Along the line of this road are to be found hamlets, towns and cities distinguished for their productive industries. For the purpose of gathering statistics pertaining to this region, Mr. Sexton, of this Bureau, was despatched on a tour of observation and enquiry. Very complete tables will be found elsewhere in this report, showing the general *status* of labor, production and wages. In order to better observe the characteristics of the country and examine the road-bed and structures of the Pennsylvania railroad, a slow or way train was chosen.

Leaving Harrisburg the railroad continues on the east side of the Susquehanna five miles to Rockville, and there crosses the river to the west side, on what is termed by railroad men, *"the five mile bridge,"* on account of it being that distance from Harrisburg. The bridge is a durable and safe structure about three-fourths of a mile in length. The road from this point runs near the west bank of the Susquehanna, passing through several hamlets where machine shops, round houses and iron establishments are located. At the Juniata bridge the road leaves the Susquehanna to the east and winds around a bold projection of a mountain and enters the valley of the Juniata. Here we find in close proximity and running parallel with each other the great representatives of internal commerce and communication, the railroad, canal and telegraph, beside the facilities afforded by the Juniata river.

Between the Juniata bridge and Newport, several local stations are passed where manufacturing is pursued to a limited extent. Newport is a town of considerable importance. A large tannery and iron establishment near it. Millerstown, situated on the north side of the river is quite a lively town; bridge spans the river and connects the village with the railroad station; distant 215 miles from Pittsburgh. Thompsontown is the next station, and is surrounded by a fine belt of farming lands. Mifflin and Lewistown are quite important towns. At the latter place a railroad intersects the Pennsylvania, and extends eastward fifty-two miles to Sunbury, on the Susquehanna, connecting there with the Northern Central.

M'Veytown. Limestone in abundance, near this town and several lime kilns in operation; town situated on north side of river; station on the south side; distant from Pittsburgh 172 miles, Philadelphia 178; fine depot; beautiful rolling country with rich and productive bottom lands. Between M'Veytown and Manayunk the main ranges of mountains are five or six miles apart, with a series of cone-shaped hills and plateaus filling up the space. Mount Union is located on the south side of the river. The East Broad Top Railroad (narrow gauge) extends from this point to Robertsdale.

The amount of business done by this road for the year 1875, is as follows:

Number of passengers carried in

December, 1874	2,920
January, 1875	3,086
February	1,617
March	2,251
April	2,940
May	2,755
June	2,746
July	2,767
August	3,937
September	2,563
October	2,898
November	2,650
Total in 12 months	30,230

The amount of freight carried in the same time was:

Anthracite coal	375 +	tons
Bituminous	63,309 +	"
Petroleum	36 +	"
Flour and feed	173 +	"
Railroad iron	1 +	"
Iron and other ores	76 +	"
Stone and lime	360 +	"
Agriculture	3,239 +	"
Merchandise and manufactures	2,894 +	"
Live stock	3	"
Lumber	1,377 +	"
Other articles	169 +	"

Making a gross amount of tonnage of over 72,000 tons, and the number of tons carried one mile, 1,920,129.

Near Mapleton is a very valuable deposit of sand rock, which is used extensively in the manufacture of flint glass. Crushing mills are in operation, giving employment to quite a number of men who are engaged in preparing it for the Pittsburg glass manufacturers.

Huntingdon, the county seat of Huntingdon county, is situated on the Juniata river, 97$\frac{5}{10}$ miles from Harrisburg. It contains a population of over 4,000 inhabitants. The railroad enters the town on a grade level with the street. The manufacturing and industrial interests of Huntingdon are considerable. They consist of car works, planing mills, steam furniture manufactory, steam tanneries, flouring, plaster and sumac mills, broom manufactories, a very extensive brick yard, etc., etc.

It is the northern terminus of the Huntingdon and Broad Top Mountain railroad, which extends to Mt. Dallas, and there connecting with the Bedford and Bridgeport railroad, and there forms a continuous line to Cumberland, Maryland. Below is appended the operations of the Huntingdon and Broad Top Mountain railroad for the year 1875 :

Doings of the year in transportation, and total miles run.

Number of miles run by passenger train	40,970
Number of miles run by freight trains	32,400
Number of miles run by coal trains	137,895
Number of through passengers for the year on main road,	7,161½
Number of passengers (all classes) carried in cars	51,407
Number of tons of 2,000 lbs of through freight for the year on main road	192,723
Number of passengers carried one mile	896,175
Number of tons of freight carried one mile, (including Broad Top and Cumberland coal)	14,940,303
Number of passengers carried one mile in the State of Pennsylvania	896,175
Number of tons of freight carried one mile in the State of Pennsylvania	14,940,303
Gross amount of tonnage for the year, (2,00 lbs per ton,)	485,458
Average rate of speed adopted by ordinary passenger and express trains, including stops	20
Average rate of speed adopted by freight trains, including stops	12
Weight of first class passenger engines, (tons, 2,000 lbs,)	30
Weight of freight engines, (tons, 2,000 lbs,)	45

Monthly statement of passengers (all classes) carried in cars:

January, 1875	3,621
February, 1875	2,542
March, 1875	3,520
April, 1875	4,082
May, 1875	3,969
June, 1875	5,370
July, 1875	6,430½
August, 1875	5,716½
September, 1875	4,756
October, 1875	4,571½
November, 1875	3,250½
December, 1875	3,578

The amount of freight specifying the quantity in tons:

Anthracite coal	1,621
Bituminous coal, (Broad Top & Cumberland,)	380,075
Petroleum and other oils	214
Pig iron	12,725
Manufactured iron and other iron or castings	1,430
Iron and other ores	45,890
Stone and lime	17,768
Agricultural products	4,629
Merchandise and manufactures	3,453
Live stock	288
Lumber	17,365

Value of real estate held by the company exclusive of roadway: 2 collieries and about 2,500 acres of land; cannot give the cash value.

Between Huntingdon and Petersburg the valley becomes narrow, limestone ridges are seen. Following up the north-west branch of the Juniata, when near Spruce creek, the first tunnel on the Pennsylvania road going west is entered. The tunnel is through a spur of the mountain, and is about sixty rods in length. At Birmingham zinc ore is found. It was formerly worked, but now the mine is idle. Tyrone forges formerly gave employment to a large number of men.

At Tyrone. The Bald Eagle Valley railroad comes in from Lock Haven on the west branch of the Susquehanna. The town is one of considerable importance and seems to be increasing in size and population. The Bald Eagle road is maintained and operated by the Pennsylvania R. R. Co., under a lease for ninety-nine years, from December 7th, 1864.

Tipton is quite a shipping point for lumber. A large seminary and fine depot here. School, however, not in operation.

Bell's Mills. At this point a narrow gauge road (3 feet) known as "Bell's Gap" railroad, connects with the Pennsylvania and extends a distance of eight and four-tenth miles to Lloyds. It is chiefly used in the transportation of bituminous coal.

Operations of the road for the year 1875:

Number of miles run by passenger and freight trains	None.
Number of miles run by coal trains	12,600
Number of through passengers for the year on main road,	4,075
Number of passengers (all classes) carried in cars	4,715
Number of tons of 2,000 lbs. of through freight for the year on main road	71,897
Number of passengers carried one mile	36,790
Number of tons of freight carried one mile	603,934
Number of passengers carried one mile in the State of Pennsylvania	36,790

Number of tons of freight carried one mile in the State of Pennsylvania	603,934
Gross amount of tonnage for the year, (2,000 lbs. per ton,)	71,897
Average rate of speed adopted by ordinary passenger and express trains	None.
Average rate of speed adopted by freight trains, including stops	9 miles.
Weight of first class passenger engines	None.
Weight of freight engines	30,000 pounds.

Monthly statement of passengers (all classes) carried in cars:

December, 1874	491	June, 1875	416
January, 1875	297	July, 1875	745
February, 1875	201	August, 1875	570
March, 1875	275	September, 1875	449
April, 1875	267	October, 1875	294
May, 1875	293	November, 1875	417

The amount of freight, specifying the quantity in tons:

Bituminous coal	70,711$\frac{1}{2}$
Merchandise and manufactures	280$\frac{1228}{2000}$
Lumber	871$\frac{1970}{2000}$
Other articles	22$\frac{1767}{2000}$

Between this point and Altoona are located Elizabeth Furnace and Blair Furnace.

Altoona, a city located on a plateau near the base of the Allegheny mountains, is an industrial centre of importance. Here are the extensive repair and other shops of the Pennsylvania railroad, besides several other establishments giving employment to a large number of men. South from this point extends a branch road known as the Hollidaysburg branch. It leads into the iron and limestone regions located in the central portion of Blair county.

The valley of the Juniata has ever been distinguished for the beauty of its scenery and rich mineral deposits which are found in the mountains that encircle it. Before the panic of 1873 the fires in the numerous forges, furnaces, and iron mills burned briskly, illuminating the valley and its mountain scenery, casting a cheerful glow over the surroundings, forming a bright picture of prosperity highly gratifying to the operator and his employees. Now the scene is changed. From the Susquehanna river, distant more than a hundred miles, to the base of the Alleghenies, a general stagnation in business is felt. Many of the places of industry are closed and the workmen are idle, or perhaps tramping on the highways of the land in search of employment. This state of things is calculated to mar and destroy the beauty and cheerfulness of that region. Nature has been prolific in the distribution of her bounties, depositing rich and valuable minerals within the reach of the inhabitants. Coal, iron, fire clay, limestone, zinc, and sand suitable for the manufacture of glass, are found in abundance, and it only remains for commerce to renew her demands to call forth the energies of the people and restore this lovely valley to its former cheerfulness and activity.

From Altoona the ascent of the crest of the Alleghenies is commenced. Detached conical-shaped mountains are in view. The road bed is laid through or across these spurs or projections. A shower of rain had fallen and the verdure of the mountain forest had been freshened. Up! up! the tireless engines speed their way. The streams are like threads of silver away down in the ravines and valleys below, and as the train sweeps around the semicircle of the Horse Shoe Bend the landscape is magnificent in the extreme. The silvery drops of water were still glittering upon the foliage of the trees and for a moment the sun cast a ray of light which gave the forest an appearance most beautiful and sublime. The varying light and shade caused by the appearance or disappearance of the sun's rays formed a picture of wild and romantic beauty surpassed by no mountain scenery in Pennsylvania.

Near the summit of the mountain is Bennington, a small town located near the upper coal measures of the Alleghenies. Here is a furnace and extensive coke yard, and mines near by. The elevation at this point is about two thousand feet above the level of the sea. The iron horse continues to ascend the mountain until it arrives within about 150 feet of its summit and then enters a tunnel seven-eighths of a mile in length. This tunnel is one of the triumphs of civil engineering. Emerging from the tunnel you arrive at Gallitzin, a mining town located on the western slope of the mountain. Bituminous coal crops out in the cuttings along the line of the railroad and its measures are clearly defined for many miles.

The distance from this point (Gallitzin) to Philadelphia is 249 miles. Two miles and a half farther west is Cresson, a beautiful summer resort, new and fresh. It is surrounded by a splendid natural park, beautified by art, and is one of the most quiet, cool and delightful places in the State. At Cresson the Ebensburg and Cresson railroad intersects the Pennsylvania. This road is eleven miles in length, extending from Cresson to Ebensburg, the county seat of Cambria county. It is leased to the Pennsylvania railroad company for the period of 999 years. Gauge of the road four feet nine inches; weight of rail per yard, forty-five pounds.

The old Portage road (now abandoned) runs parallel and near the Pennsylvania road for some distance. At Gallitzin the descent towards Pittsburg down the western slope of the Alleghenies commences. All along the line from this point to Johnstown evidences of great mineral wealth are manifest, and quite a number of collieries and other places of industry are seen. The descent to the Conemaugh is more gradual than on the east side of the Alleghenies, being at no point more than at the rate of fifty-six feet per mile. Johnstown is one of the most important industrial centres along the line of the Pennsylvania railroad between Harrisburg and Pittsburgh. Near this point is a *track tank* used for supplying locomotives with water while in motion. It consists of a long shallow tank lying between the tracks. This is filled with water and as the locomotive passes over it a scoop is let down and forces the water into the tender which is supplied without stopping the train.

At Johnstown are located the great iron manufacturing establishments of the Cambria iron company, which give employment to several thousand men. Tabular statements will be found elsewhere in this report, under appropriate heads, of the business done by this company. Mr. Sexton is under obligations to John Fulton, chief engineer, and David Peelor, Esq., for an opportunity of witnessing the operations and workings of the various establishments of the company. Maps were also examined of all their mines, (iron and coal,) showing the plan of the work, together with the process of ventilation, drainage, etc. Conemaugh, Cambria City, Johnstown and Sheridan are located near each other, and are closely allied in business.

After leaving Johnstown you descend quite rapidly to the rolling country of Westmoreland.

A short distance west of Sang Hollow the mountains appear very high, the river (Conemaugh) having worn a deep passage down through them. Near Nineveh the country appears more fertile and productive.

At Blairsville, a branch of the Pennsylvania railroad extends in a northerly direction 19 miles to Indiana, the county seat of Indiana county. On the Blairsville section is Coketown, where coke is made extensively; about 400 ovens are used in its manufacture. We continue to descend from plateau to plateau, mountains on either side appearing and disappearing, now presenting the coal measures in the centre of a rich agricultural district, and then mountains, ravines and table lands in quick succession.

Greensburg is the county seat of Westmoreland county. At this point the South-west Pennsylvania railroad intersects with the main line, and extends to Ferguson, a distance of about 30 miles, running through and connecting with the rich coal fields of Westmoreland and Fayette counties.

From Greensburg to Pittsburg, a distance of 31 miles, you pass through a country rich in agricultural and mineral products, and teeming with an industrious people. Coal mines, coke yards and various manufacturing establishments are scattered along the line in profusion, in fact for a distance of twenty miles before you reach Pittsburg, you are led to believe from the appearance of the country, the fine residences and the numerous places of industry that you are approaching a great city. In this locality the way and flag stations average one for every mile, thereby affording ample railroad facilities to the business men and traveling public.

We are now safely landed at the Union depot, two hundred and forty-eight miles from our point of departure. The journey has been made at intervals covering a period of several days. During this tour ample oppertunity has been afforded to observe the characteristics of the line its road bed, structures, etc., and also, the demeanor and efficiency of its employees. The road we found in a most excellent and safe condition, and the employees, (to whom we were a total stranger, and who knew nothing of the object of our mission or from whence we came,) were gentlemanly and attentive to duty.

Pittsburgh is situated at the confluence of the Allegheny and Monongahela rivers, and is frequently termed the "Birmingham of America."

Allegheny City containing a population of over seventy thousand inhabitants, is situated across from Pittsburgh on the west side of the Allegheny river. Although Pittsburgh and Allegheny cities have separate municipal governments, yet in point of location and business interests are inseparable and should be considered as a whole in an industrial point of view. These cities contain an aggregate population of about 225,000, and cover an area of about thirty-five square miles or a little over twenty-two thousand acres. Mr. Sexton spent several days in Pittsburgh and Allegheny, visiting furnaces, forges, rolling mills, foundries, machine shops, car works, glass manufactories and other places of industry and obtained a large amount of statistical information which will be found duly classified and tabulated elsewhere in this report. He acknowledges his indebtedness to George H. Thurston, Esq,, author of "Pittsburgh and Allegheny in the Centennial Year;" John F. Dravo, general manager for the Pittsburgh and Connellsville coke company; Joseph D. Weeks, secretary of Board of Trade; Morton Hunter, Esq., deputy district attorney; Wm. M'Cully & Co., Porter, Bell & Co., Lewis, Olliver & Phillips, of Pittsburgh, and John S. Nichols, civil engineer of Allegheny, and business men generally for assistance in collecting statistical data.

PITTSBURGH AND ALLEGHENY.

By permission, from a well written pamphlet, entitled "Pittsburgh and Allegheny in the Centennial Year," by George H. Thurston, Esq., ex-President of the Board of Trade of Pittsburgh, we obtain the following information in relation to the great city of Western Pennsylvania:

Pittsburgh combines more geographical advantages of position than any inland city or town in the United States. Distant only from 300 to 400 miles from three of the most important seaboard cities of the Union, and but a summer day's ride from either, for the purposes of exportation or importation, she possesses many of the advantages of the cities lying immediately upon the sea coast.

About 150 miles from the great chain of inland seas, to whose shores access is had in a few hours' ride, she partakes of the advantages of the lake cities for intercourse with the Canadas; and for outlet through the lake route to the ocean; while by her rivers she commands another and an easy access to the ocean and foreign nations. Thus having the choice of three avenues whereby she may export beyond the borders of the United States her manufactures, or receive the products of other countries.

Situated in the heart of the bituminous coal formation of the Appalachian field, and equally advantageously located as to the deposits of iron ore, her geographical relations to the staple materials of Pennsylvania, as well as of the Union, are unequaled. Her location to the whole extent of country bounded by the Atlantic Ocean on the east, the Gulf of Mexico on the south, the Mississippi river on the west, and the lakes upon the north, is so nearly central, that when viewed with reference to her natural means of intercourse with the States within those boundaries, *she stands in the position of a geographical centre.* Describing upon an accurately proportioned map of the United States a circle, with a radius of 400 miles from Pittsburgh, it embraces therein the following States entire, and in parts: Pennsylvania, New York, Vermont, Massachusetts, Connecticut, Rhode Island, Delaware, New Jersey, Maryland, Virginia, Ohio, North Carolina, Tennessee, Kentucky, Indiana, Michigan, Canada West, part of Illinois, and the northern portion of South Carolina. This circle embraces every variety of climate, and nearly, if not quite all, the staples of the various sections of the Union; *the products, and the business of which, Pittsburgh, as the centre of the circle, reaches but* 400 *miles on either hand.*

Situated at the head of such a great inland water highway, with its consequent powers of cheap carriage, Pittsburgh must become a great produce centre, and trans-shipment and distribution point, not only of the western products needed by the Atlantic States, but also of the importations from Europe or eastern products required by the West. Some few statistics will show how probable this is. The sixteen sea coast States even now depend on the West for two-thirds of their food, and the question of their supply assumes in the future under the increasing ratios of population an overwhelming magnitude. Cheap transportation is therefore one of the provisions required for the future comfort and cheap sustenance of the people of those States. How distinctly the geographical position of products and consumers of food in the United States suggests the central route of the Ohio valley as the line of a cheap transportation facility, and the advantages of water for cheap carriage indicates the Ohio river as that facility. The position of Pittsburgh, at the head of the Ohio, her direct and short railroad routes to the Atlantic coast, tells in a word what, under the full use of that river as a cheap carrying power, the city must be.

GROWTH OF POPULATION AT PITTSBURGH.

In the wealth of their population, Pittsburgh and Allegheny would probably compare unfavorably with the large eastern cities as to the number of persons usually termed millionaires, implying the possession of $500,000 or over. Yet, in point of persons who may be considered independent, and those possessing handsome fortunes and competencies, there is in all possibility no other city, for the same population, can compare favorably with Pittsburgh.

The wealth of the city is generally distributed—a result of the frugality and industry before mentioned, as well as of the opportunities here, for the accumulation of money.

The population of Pittsburgh, including Allegheny, is at the present time over 200,000, even leaving out precincts which might be truthfully classified in the city. There are many towns whose growth seems to have been more rapid than Pittsburgh, and probably for a short period has been so; yet, viewing the increase of Pittsburgh for a series of years, we find there has been, in the swell of population, a progress which has attracted but little attention, and is in its comparative ratio with the growth of other points, undervalued by even her own citizens.

That progress is best shown by progressional ratios. In 1800 the population of the portion of the western country to whose borders Pittsburgh has navigation, as shown in the chapter on the geographical position of the city, was 385,647, while that of the city itself was 1,565, or a little over four-tenths of one per cent. In 1810 there was in the same territory 1,075,531 inhabitants, and in Pittsburgh 4,768, or nine-twentieths of one per cent. In 1820 the population of the same section of the country was 2,541,552, and that of Pittsburgh 7,248, or not quite three-tenths of one per cent. In 1830 the same section of the Union had 3,331,298 inhabitants, and Pittsburgh 16,988, being over five-tenths of one per cent. of all. In 1840 there were 5,173,949 inhabitants in the western and south-western States, while the population of Pittsburgh was 38,931, being fifteen-twentieths of one per cent. In 1850 the population of the section of the Union just mentioned, was 8,419,179, and that of Pittsburgh 79,873, being nineteen-twentieths of one per cent. In 1860 the population of the western and south-western States was 11,489,318, and that of Pittsburgh and Allegheny cities, and their adjoining boroughs, whose population is really part of that of the two cities, was 124,844, being nearly one and one-tenth per cent. In 1870 there was in the section of the Union under comparison, 14,583,567 inhabitants, while in the community of Pittsburgh and Allegheny there was a population of 199,130, being one and nearly four-tenths per cent. Considering the location of Pittsburgh as a natural centre, as shown in the chapter on the city's geographical position, to the population of this great mass of the Union, it would be far from unsatisfactory, as showing her prosperity, if her population had increased in arithmetical proportions with that territory of which she is the centre; and yet more satisfactory if that increase of population was in corresponding ratios with that of the western and southern States, to which she has, in past years, looked for her markets, and to which she has access by her river transportation facilities. A brief comparison will exhibit Pittsburgh's vitality in this respect, and present in the most comprehensive and satisfactory form her growth.

In 1800, as previously stated, the population of Pittsburgh was four tenths of one per cent. of that of the West and South.

To exhibit a steady growth with the population of the South and West, the ratio of four-tenths of one per cent. of that population is all that would be required to be maintained. In 1810 the population of the city was 4,786, or nine-twentieths of one per cent.; the ratio of four-tenths of one per cent. being only 4,300. In 1820 the population of the city was 7,248, being not quite three-tenths of one per cent.; the ratio of four-tenths requiring 10,164 inhabitants. At this period the business of the city was in a ruined condition in consequence of the reaction in the prices and activities of the war of 1812, under which Pittsburgh had been very prosperous. In 1830 the maintaining of the ratio of four-tenths of one per cent. would require that Pittsburgh should have 13,324 inhabitants; it had at that date 16,988, or over five-tenths of one per cent. In 1840 the ratio of 1800 required a population of 20,692; there was 38,931, or fifteen-twentieths of one per cent. In 1850 the population of Pittsburgh was equal to nineteen-twentieths of one per cent. of that of the West and South, or 79,873, while the maintainance of the ratio of four-tenths would demand but 33,676. In 1860 the ratio of four-tenths of one per cent. required a population of 45,956, and there was 124,844, or one and nealy one-tenth per cent. In 1870, the community of Pittsburgh and Allegheny numbered 199,130, being one and nearly four-tenths per cent. of the population of the West and South; the ratio of 1800 only requiring 58,322 inhabitants, that being four-tenths of one per cent. of the then population of the southern and western States.

Although the early growth of Pittsburgh was retarded by the cloud over the Penn title and the foreign tenure of Louisiana, yet from these figures it is apparent that Pittsburgh has not only increased in population in the same proportion that her market has, but has largely compounded on those ratios.

From 1817 to 1825 the city was at a stand-still, from effects produced by the terminus of the war of 1812. In 1817 many factories stopped, and until 1821 there was a continual downward tendency in all business and property. In 1821 the distress appeared to have reached its height; manufactories, trade and industry were all prostrated. In May of that year the price of flour was one dollar per barrel, boards were two dollars for a thousand feet; whisky, fifteen cents a gallon; sheep and calves, one dollar per head. It required a bushel and a-half of wheat to buy a pound of coffee, and twelve barrels of flour to purchase a yard of superfine broadcloth.

In 1825 and 1826 the city began to rally, and in 1830 she was again prospering. In 1837 she was with other cities retarded by the subsidence of the land-speculation fever and the panic. It will, however, be observed that notwithstanding these adverse years, that from 1820 to 1830, there was an increase equal to 135 per cent., or 13½ per cent. a year; and that from 1830 to 1840, an increase of 129 per cent., or nearly 13 per cent. a year.

From 1840 to 1850 the increase was equal to 105 per cent., or 10½ per cent. a year. This increase was relatively more rapid than its percentage indicates, as twice the number of population was doubled in that decade to that which had been in the previous one. From 1850 to 1860 the increase was equal to only a little over 61 per cent., or $6\frac{1}{10}$ per cent. a year, although the actual increase in number of population was five thousand over that of the previous decade. The heavy population to be doubled upon producing a lessened percentage of increase, although the actual gain was, in whole numbers, greater. From 1860 to 1870 the increase was equal to not quite sixty per cent., or a little less than six per cent. a year, although the actual numbers added to the population was sixty-five per cent. greater than in the decade from 1850 to 1860. This diminution of the percentage of the increase upon the whole number of the community in each decade, results not from diminished increase in numbers—yearly added—but from the greater magnitudes of the sum total of the city's population on which the percentages are computed, and could not be otherwise, unless under some unusual aggregation of fresh population. While, as in that last decade, the actual numbers added show so large a per cent. of gain over the numbers increased in the previous decade, it is apparent there is a rapid growth even under diminished percentages on the previous population totals. The monetary troubles of 1857, and the depressions of

1860–61 naturally checked the growth of the city, but as the results in 1870 show the effects were only temporary.

Statistics are almost prophetic in their relations to the future, and a study of them gives confidence in the deductions from their showings. Where the statistics of any given thing show the original ratios of increase to have been sustained and verified from decade to decade, there is good reason to have confidence that where the same powers that have caused that increase still are operative, that what has been verified in the past will be continued in the future.

The steady increase of the population of Pittsburgh during a period of seven decades, through the disasters of the peace of 1815, the bankruptcies of 1837, the great fire of 1845, the monetary troubles of 1842, the local panic of 1854, the national panic of 1857, the depressions of 1860–1, from the outbreak of the rebellion, indicate clearly that, although each decade depressing periods of business and stagnations of commerce similar to that of 1873–4–5, have occurred, yet the city, as a whole, has continued to increase its population, and consequently its business, however, individuals may have, in the wreck and crash of private fortunes and individual interests, sunk and been forgotten.

Though the panic of 1873, and the prolonged business uncertainties of the past three years, have had their effect on the city's growth, it will be found in the future, as it has been in the past, that in a decade of years the ratios of growth will show no material disturbance.

Pittsburgh's geographical position is unchanged; her railway system as comprehensive as ever; her power of manufacturing as great, and is on the eve of obtaining yet greater force. Her position at the head of a grand system of inland navigation will receive new strength and importance during the present decade, in that permament improvement of the navigation of the Ohio which is now on the eve of being begun. With the markets of the world opening to the manufactured products of the United States, under their ability, by their power to manufacture cheaply, to compete with and in European and Asiatic nations, Pittsburgh will grasp her share of this new volume of trade. In the obtaining of it, in addition to that of her old markets of the South and West, and to which she is in steel and iron, glass and other staples, rapidly adding to that of the East, population will continue as heretofore to go hand in hand with her increasing production and sales. Where the statistics of the past so forcibly, through a period of seventy years, show the aggregate of population, it is reasonable to believe that the statistics of the population of Pittsburgh in the eighth decade will repeat what they have shown in the past seven. Why should they not, when all and more of the power that has attracted population in the past still exists? Under the ratios of the past it is not presumptuous to believe that, in 1880, four years from now, the census will show Pittsburgh and Allegheny to have 240,000 inhabitants, and over 300,000 in 1890. From 1850 to 1860, in which occurred two periods of depression of business, over 44,000 inhabitants were added to the population of the city. If from 1870 to 1880 only the same number should be added to what the census of 1870, six years since showed, a population of over 240,000 will be reached. From 1860 to 1870 over 74,000 people were added to the population. From 1880 to 1890, so far as human intelligence can see, promises to be a prosperous decade for the United States. The effects of the panic of 1873 are slowly wearing away. The finances of the nation are gradually adjusting on a fresh basis, remote from the inflations of the past. Capital is abundant, and with the returning confidence, will become active from its own inherent, necessity to be employed to preserve itself from decrease in its holders' hands. The manufactures of the United States are reaching beyond their own home markets for sale of their products, and with success; and the horoscope of the decade of 1880–90, indicates enterprise, activity and development, as full of progressive results to Pittsburgh as the period from 1863 to 1873. Within that period, as before stated, 74,000 people were added to the city's population. If only the same number are added from 1880 to 1890, when there is every probability that the conditions incident to growth will be as great and greater, than in 1860 to 1870, a population much over 300,000 will be attained. Taking therefore the actual ratios of increase of population for seventy years, as shown from the census during that space of time, and also the actual numbers of inhabitants gained in the two decades from 1850 to 1860 and from 1860 to 1870, and there seems no improbability that in 1880, as previously asserted, Pittsburgh will have a population of over 240,000 people, and more than 300,000 in 1890. In this increase of population, and the consequent business that will have attracted them, and increased by their presence, as well as have been increased by their enterprise, are there not possibilities for capital, merchants, skilled mechanics, industrious workmen, holders of real estate, worth thinking of?

TONNAGE OF PITTSBURGH.

The following table shows number and tonnage of steamboats, &c., constructed in the vicinity of and enrolled at the Port of Pittsburg, from 1857 *to* 1875.*

YEAR.	1858.		1859.		1860.		1861.		1862.		1863.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Steamboats	27	4,930	53	8,678	68	11,892	14	2,774	50	6,992	81	16,625
Ferry boats	2	168	1	109	1	129	1	163	....	....	1	205
*Keel and flat boats	10	386	10	386	6	129	21	762	61	1,870	88	4,055
Barges	10	1,671	6	347	8	751	8	808	13	1,746	19	2,166
Totals	49	7,177	70	9,520	83	12,900	44	4,507	124	10,608	189	23,641

YEAR.	1864.		1865.		1866.		1867.		1868.		1869.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Steamboats	84	18,361	45	13,666	46	14,206	18	7,327	13	2,553	26	8,761
Ferry boats	1	139	9	716	2	315	3	361	3	136	1	73
*Keel and flat boats	59	3,009	140	5,978	68	2,879	7	192	9	701	5	516
Barges	15	2,102	30	4,911	31	8,363	36	7,498	70	12,986	43	9,025
Totals	169	23,711	224	25,265	147	25,703	64	15,608	95	16,370	75	18,375

YEAR.	1870.		1871.		1872.		1873.		1874.		1875.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Steamboats	29	11,631	33	10,689	22	8,975	25	5,392	3	242	12	2,462
Ferry boats	....	....	2	96	....	....	1	80	....	....	....	....
*Keel and flat boats	3	272	1	67	3	183	1	47	2	172	2	58
Barges	25	6,480	30	6,067	30	7,124	106	21,011	34	7,306	4	581
Totals	57	18,383	66	16,919	55	15,382	133	26,530	39	7,720	18	3,101

*There was in the same period enrolled 113 canal boats, with a tonnage of 4,702 tons. Also constructed in 1859, 1863, 1865 and 1875, one propeller each, and in 1873 three. Also in 1862, 1863 and 1866 one steam canal boat each year. Also in 1867 one schooner, and in 1872 one. Also in 1873 and 1874 two dredge boats each year.

MINERALOGICAL POSITION.

It is without doubt to her location in the bituminous coal basin of Pennsylvania, that Pittsburgh owes her position as a manufacturing city. Located in the north-western section of the great "Allegheny or Appalachian Coal field," frequently known as the great central bituminous coal seam, Pittsburgh has given to that portion of the coal measure from which her wants and those of the West are supplied, her own name.

Rogers and Trego state that the seam known as the " Great Pittsburgh Seam," is the most extensively accessible one in the western coal measures.

The "Great Seam," as it is called in most geological works, or as it is more definitely known, "The Great Pittsburgh Seam," is finely exposed at Pittsburgh, and along the Ohio and Allegheny rivers; also extending nearly the whole length of the Monongahela river. This seam has been traced through Pennsylvania into Virginia, and also into Ohio, and is from twelve to fourteen feet thick at the south-western border, from six to eight feet at Pittsburgh, and about five feet still further westward in Ohio.

Of this seam, Mr. Lyell, the eminent English geologist, says in his travels in North America: "I was truly astonished now that I had entered the hydrographical basin of the Ohio, at beholding the richness of the seams of coal which appeared everywhere on the flanks of the hills and at the bottoms of the valleys, and *which are accessible in a degree I never witnessed elsewhere. The time has not yet arrived when the full value of this inexhaustible supply of cheap fuel can be appreciated.* * * To properly estimate the natural advantages of such a region, we must reflect how the three great navigable rivers, such as the Monongahela, Allegheny and Ohio, intersect it, and lay open on their banks the level seams of coal. I found at Brownsville a bed ten feet thick, of good bituminous coal, commonly called the Pittsburgh seam, breaking out in the river's cliffs, near the water edge."

Of the capacity of the bituminous region for mining, Trego says: "In the bituminous coal fields there appear to be not less than ten separate layers or beds of coal of sufficient capacity for mining, and which vary in thickness from three to ten feet." R. C. Taylor, in his coal statistics, says: "It is possible that within the entire series, from the conglomerate upwards, ten such seams may exist; but we have not seen a position where more than half that number could be approached."

Toward the north and north-eastern side of the coal range, the seams range from three to four feet. Near Karthaus eight coal seams have been traced, three only are workable, the largest being six feet.

At Blossburg and around the head of Tioga river, from three to six seams occur, but not more than two have been mined, and the coals are sent by railroad to New York State.

There are commonly four coal seams existing within the formation in the north-east extremity of the field, and it is but seldom that more than two workable beds occur in the same locality.

At Pittsburgh, the main bed of workable coal is six feet, and increases in thickness as it proceeds up the river to Brownsville, where, as mentioned before, it is estimated by Lyell at ten feet.

Extensive as is the field of bituminous coal in Pennsylvania, thus scantily dotted out in these remarks; and incalculably valuable as it is to Pittsburgh as a manufacturing city, not less valuable to her is the anthracite deposits of coal, when viewed in connection with the consumption of iron by her manufactories.

The bituminous coal field lies principally west of the Allegheny mountains, and extends from Towanda on the north-east, to the south-west angle of the State, a distance of two hundred and fifty miles.

The coal fields of Tennessee, Kentucky, Ohio and Virginia, by reason of the natural avenues of transportation and trade, stand in a supporting relation to the coal measure of Western Pennsylvania.

The area of the Tennessee coal fields is 45,000 square miles; of Ohio, 44,000, and of Kentucky, 40,500. A certain portion of these in each are iron producing regions at the present time, and will no doubt become yet more productive.

In Ohio, although the statistics of M'Cullough give that State an area of 40,000 square miles, Prof. W. W. Mather estimates the area undoubtedly underlaid by coal at but 12,000 square miles, of which only 5,000 contains workable veins. "The Ohio coal," says R. C. Taylor, "makes good coke, and mixed with charcoal in the production of iron, creates an increased make, equal, it is affirmed, to 33 per cent."

The Kentucky field, according to Prof. Mather's Geological Report of 1838, has an area of workable coal veins of 7,000 square miles. There are in that area several qualities of coal. The main, or Pittsburgh seam, which extend from Pittsburgh through Virginia, reaches Sandy at the boundary of the State, but does not extend into it. Taylor says that nearly all the coal brought into use in Kentucky is of the description called cannel.

The Tennessee division of the Allegheny range occupies an area of 43,000 square miles, the greater part of which consists of the elevated local group known as the Cumberland mountains. The quality of the coal is spoken of as excellent. An analysis of it shows that it approaches in character the semi-bituminous variety of Pennsylvania.

These three States, from reason of their production of iron—a portion of which comes to Pittsburgh for a market—must always in their mineral production be important auxiliaries to the manufactures of Pittsburgh.

Not less to the iron deposits which surround this locality, than to her coal, is Pittsburgh indebted for her past, and dependent for her future. Cheapness of fuel, in the larger proportion of cases, justifies a transportation of mineral to the locality of the fuel; but where the transportion of mineral is necessary but for short distances, and by easy artificial and available natural channels, the combination of cheapness of fuel, with great supplies of mineral immediately at hand, constitutes the locality which must become and always be, a great manufacturing centre. These two requisites Pittsburgh has, and in the importance of fuel as a requisite for manufacturing, she has of late acquired a new power.

Within the last twelve years petroleum has been largely added to the mineral products and advantages by which Pittsburgh is surrounded, and with it large veins of natural gas have been struck, whose future value is yet undetermined in the manufacturing progress of Pittsburgh and its vicinity. The volume of this gas is immense, and its power in enabling cheap manufacturing will be great. Found in Venango, Butler and Armstrong counties in great abundance, there is every indication that it will also be obtained in Allegheny county, and in the very heart of the city itself, in abundance. It has already been brought from Butler county to the iron mills of Pittsburgh, by means of pipes. While much yet remains to be done in conveying it from the gas wells of those counties in the most reliable manner, yet sufficient results have been obtained to show that, much as Pittsburgh owes to her central position in the bituminous coal field, it is quite possible she will be more indebted to this immense provision of gas for supremacy as a manufacturing city. If, as indications give every reason to believe, this gas should be obtained from the very ground upon which the factories of Pittsburgh stand, there will be at her command a fuel which, surpassing even her coal for quality in its application to the reduction and manufactures of metal, will be of almost inconceivable cheapness. Shooting up of its own force from the depths of the earth, and needing but to be distributed in pipes to the furnaces and forges, or such fires as are needed for manufacturing purposes, or for the creation of steam, it will be seen the cost of such fuel will be very small.

Having briefly sketched the fuel fields surrounding the locality of Pittsburgh, we spare a few paragraphs to an equally brief description of the ore field from which she has drawn, and is to draw, her supplies of iron.

Throughout the counties embraced in the bituminous coal region, are to be found extensive beds of iron ore, and equally large deposits in the counties east of and lying along the bases of the Allegheny Mountains. The Allegheny river affords a cheap channel for the supply of iron from the counties lying upon that river, and the Monongahela river and Pittsburgh and Connellsville railroad for the iron from the neighborhood of the Youghiogheny and Cheat rivers. The Pennsylvania Central Railroad for the metal of the interior and mountain counties. The quality and quantity of the Allegheny river and Central Pennsylvania iron is so fully known as to need no exposition. It is sufficient that the fullest access to them is had. The irons of the celebrated Juniata region are, as it were, at Pittsburgh's door, while to the west of her those of Eastern Ohio are equally available. The rich ores of Virginia will, on the completion of the Pittsburgh, Virginia and Charleston Railroad, be as fully beneath her hand. The ores of Lake Superior or the iron of the furnaces of those regions, are cheaply transported by water carriage, with but about one hundred and fifty miles of rail carriage, while the irons of Missouri are reached by the cheapest of carrying agents, through the Ohio river.

The furnaces of Kentucky, Tennessee, and the central river counties of Ohio, also send their metal here for sale. It will be noticed that in iron, as in coal, Pittsburgh is centrally situated to the products of four States, and that she is in her own State immediately surrounded by vast deposits of that mineral, while to those of two other States, Michigan and Missouri, she is, by reason of facility of cheap transportation, brought almost into as central a position.

What has been the natural effect of such a mineralogical position upon the past of Pittsburgh, and what will be its effect upon her future, it is hardly necessary to inquire. The results are seen in her past progress and her future indicated by that past.

Important as may have been her position at the head waters of the Ohio, and as a supplier of merchandise to the country along the waters of the Allegheny, Monongahela, and a portion of the Ohio, and of the counties situated along the western basis of the Allegheny Mountains, before the age of railroads, and prominent as may have been that position under the circumstances then existing; yet it is apparent that, to her manufactures, she is indebted for the importance which has enabled her not only to hold her position as an important market for the last fifty years, but also to increase in a wonderful ratio.

The two substances, coal and iron, are always, when rendered available, the basis of great and permanent commercial and manufacturing wealth. Spreading a map of the nations of the earth before us, we at once perceive that those in which exist extensive deposits of these two, at first glance unattractive substances, are among the wealthiest, as well as most powerful nations of the world, and that upon and around these formations the most flourishing populations are concentrated. "Coal," says Vischers, "is now the indispensable aliment of industry. * * It is to industry what oxygen is to the lungs—water to the plant—nourishment to the animal." Says Elett: "This is essentially the age of commerce and of steam, the foundations of which are our coal mines. In the machine shop and factory, on the railroad and canal, on the rivers and ocean, it is *steam* that is henceforth to perform labor, overcome resistence and vanquish space. There was no appreciable iron trade anterior to the introduction of the steam engine, an instrument of power deriving its efficiency almost entirely from *coal*."

The connection of the past of Pittsburgh, with the coal deposits of Pennsylvania, so rich and so easily mined, is too plain to need comment. Coal has been the life of the steam engine, and the steam engine has been the great power which called into existence our manufactures. On the future of Pittsburgh as connected with her two minerals, we have no need to expatiate.

MANUFACTURING ADVANTAGES.

By reference to the geographical position of Pittsburgh, it will be observed that, in the very important requisite of natural and cheap channels for the distribution of productions, Pittsburgh is possessed of remarkable advantages. A similar reference to the exhibition of the Pittsburgh railway system will show, that in her artificial avenues for distribution, there is an equal superiority of position. By that reference it will be observed that through her river channels, she reaches from her own site, an extent of country embracing more than 1,000,000 square miles, over which she has unlimited powers for distributing her manufactures to the populous cities, growing towns, and thriving villages, which are profusely located throughout it; and that by her railroad system, she possesses almost equal facilities for distribution.

This power of distribution is in itself an advantage of great weight, without which the ability to produce copiously and cheaply would be of less worth. It stands in the same relation that ability to send his crops readily to the best market does with the agriculturist. It would matter not how bountifully the earth might yield of its grains and fruits, if the carriage to consumers was difficult, slow and costly. The gains would be small, and the amount disposed of limited, while some more favorably situated section would obtain the trade. Not only is facility of distribution of much consideration, but centrality of location to the market to be supplied is of equal desirability. Transportation to a wide circumference is easy, when but half diameters are traversed to reach any point of the circle; thus greatly reducing transportation expenses in the aggregate carriage to a broad market. Pittsburgh not only possesses that centrality of position, but combines it with such remarkably comprehensive lines of transportation, that probably no city is possessed of equal advantages. This, an examination of her geographical position and her railway system shows. A broad market is a great basis to the encouragement of manufactures; and where the possession of such a market is accomplished by easy reach to all its points, through but comparative short distances of carriage, an advantage of great value is held.

After the power of distribution, the next point which attracts the attention of the observant person, is the position which Pittsburgh occupies for the easy reception of the staple materials of the country. By the Pennsylvania Central railroad, the Pittsburgh and Erie railroad, the Pittsburgh and Connellsville railroad, the Allegheny Valley railroad, and the

Allegheny and Monongahela rivers, Pittsburgh penetrates into the entire iron regions of Pennsylvania, in every direction. When it is considered that there are but eight counties out of the sixty-two in the State that are incapable of the production of iron, the body of iron, and the variety of ores, and the consequent character of the metal, which, as it were, immediately surrounds Pittsburgh, is apparent. To this vast amount of material, Pittsburgh has full access ; and as already specified, great facilities for the transportation of the mineral from the furnaces to her rolling mills and foundries, or of the raw ores from their deposits to her own furnaces. In addition to the Pennsylvania ore deposits, which are just beginning to be developed, she has equal facilities for receiving the products of the eastern Ohio iron furnaces, by transportation over the Pittsburgh, Fort Wayne and Chicago, the Pittsburgh and Cleveland, the Pittsburgh, Cincinnati and St. Louis railway, and the Ohio river. The Ohio river gives also cheap facilities for receiving the products of the Tennessee and Kentucky furnaces, and the ores and metals of Missouri. While the lakes, with their cheap water carriage, and the short portage of the Cleveland and Pittsburgh railroad, give equal advantages for obtaining the metals of Lake Superior.

The Allegheny river and the Allegheny Valley railroad, penetrating one of the finest wooded districts in the country, give to Pittsburgh enviable facilities for cheap transportation from that district of such timber as the various manufactures in wood which have and may arise demand. The Monongahela river, now, and the Pittsburgh, Virginia and Charleston railroad, more fully in the future, will give facilities for obtaining the fine timber of Western Virginia ; and this latter road access likewise to the rich and desirable ores of that section. For foreign wood the Pennsylvania Central railroad, connecting with the eastern seaboard, and the Chesapeake and Ohio canal, connecting, by the Pittsburgh and Connellsville railroad to this city, with the south-eastern sea-coast, afford a cheap transportation of such quantities as may be required. For wool, hemp, cotton, and in fact any of the staples of the various sections of the Union, the exhibit which is already given of our rivers and our railways shows how readily they can be laid down in Pittsburgh, and how cheaply.

In the reception of material the same advantage of centrality of position obtains as in the distribution of it in its manufactured forms, producing, in the combination of lessened expense, of reception in crude forms, and of re-distribution in finished shapes, a great general advantage not to be too highly valued, and one at all times powerful in holding position against competition.

After the facilities for the distribution of productions and the reception of material, the next important quality in creating and continuing a great manufacturing city is fuel.

There is no point combining, as Pittsburgh does, the two first necessary advantages, that possesses the last in so valuable a shape. Other cities may obtain coal of a good quality and in quantities; yet the advantage remains with Pittsburgh, from the easy access which is had to it, and the consequent cheapness of the articles. To manufacture in Pittsburgh there need be, from the location of the coal strata and the advantageous sites for factories at this point, little or no cost for the transportation of fuel. The coal lies in the hills from one to two hundred feet above the bottom lands, on which the factories being located the coal can be sent down by cars directly into the yards thereof. On the left bank of the Monongahela, and within the city limits, the coal lies 200 feet above the level of the river bank, and is in a number of instances sent down into the mills and foundries in the manner described, in which cases the cost of fuel is only about eighty cents per ton of 2,000 pounds. Where from any cause the factory is located in such a manner that advantages cannot be taken of these unparalleled facilities for fuel, the cost of coal delivered in the yards of the mills, foundries, &c., is only from $1 31 to $1 50 per ton; and contracts have been made at $1 16 and $1 20. There is a large extent of ground suitable for all descriptions of manufactories, where, as previously stated, coal can be sent down into the yards at a cost not above $1 00 per ton of twenty-five bushels, and down to eighty cents. In any article which requires for its manufacture large quantities of fuel, the great advantage gained by this easy obtainance of fuel, and the almost nominal cost per bushel or ton, is decisive as to the advantage of the location.

All this advantage of coal fuel Pittsburgh has possessed in the years that have passed and still maintains. Of late years a new substance has literally arisen, which seems destined to place Pittsburgh beyond the power of competition, so far as fuel is the controlling power, which it is where great quantities are requisite in the manufacture of articles.

This new substance is the natural gas that has been found in the petroleum regions of Pennsylvania. The immense quantities of this substance that rushes up through the holes or wells that have been sunk, is almost beyond comprehension. It is presumed to be inexhaustible Similar escapes of a like gas in Asiatic Europe, on the borders of the Caspian sea, are known to have continued for hundred of years without apparent diminution. For the manufacture of metals, this gas, by reason of its purity of flame, strength of heat and absence of sulphur or other deleterious ingredients, is without a peer. Some of the largest veins that have been struck are within a comparatively short distance of Pittsburgh, and pipes from one of these wells has been laid a distance of some seventeen miles, to the iron works Spang, Chalfant & Co., the Isabella Furnace and the iron mills of Graff, Bennett & Co., in all three of which the gas is used as a fuel in the place of coal. At the iron works of Rodgers & Burchfield, a gas well within a quarter of a mile of the mill, was utilized a year or more ago, and its success fully demonstrated. But upon that point there is no question. The quality of iron made by it is greatly superior to that treated with coal. Increased quality combined with decreased cost of fuel, is the result where this new fuel is used. Such a combination creates a manufacturing advantage that seems to set at defiance any competition, and opens to Pittsburgh, in the contest of the United States for foreign markets, just now begun, a wonderful advantage in the production of articles where cost of fuel and superiority of quality by use of superior heats, enters into the cheap production and its consequent ability to control markets. The probability that exists from many indications that this supply of natural gas is not merely in the counties of Western Pennsylvania, where petroleum is obtained, but is under the very surface on which the manufactories of Pittsburgh stand, is a still further advantage, as it will not need to be brought from a distance in pipes, but procured at the immediate side of the fire it is to supply. Rushing up from the depths of the earth by its own force, the cost of fuel, when once the well is sunk, is nothing.

This advantage of fuel, without the ability to distribute widely and cheaply, and to receive raw materials from a distance easily and cheaply, would of course be in itself isolated from the other two, of little or no value; nor would they without the other, be of the same force or value; but such a combination of these three, as exists at Pittsburgh, is, beyond disputation, unsurpassed—perhaps unparalleled.

Coal is being found in many localities, where, twenty years ago it was not supposed to exist, and methods of treating it so that its impurities will have less effect upon the metals and ores, subjected to its flames, have been devised; but in that there is additional expense which still increases the cost of fuel, while in no case has the same facility for obtaining the fuel been realized. The natural gas may perhaps be obtained in other sections; but where there are indications that such may be the case, the other combinations of material, especially in irons and distribution facilities do not exist. With the growth of the country competition must naturally arise, but a great manufacturing community is not born in a day. It has taken Pittsburgh over fifty years to attain her proportions, and gather around her the facilities of skilled workmen, experience, reputation, and varied factories, whose facilities are each a support to the other. The ease with which the government, in the late war, was able to have furnished without delay at Pittsburgh, a great variety of munitions of war; to build armed and iron-plated ships; to obtain cannon, and have them rifled; to have shot and shell cast, ambulances, gun carriages and army wagons built; all without the loss of time in the construction by it of a workshop or machinery for the manufacture of those articles, shows forcibly what power, facility and ability there is in a long established manufacturing community.

This is another advantage that Pittsburgh possesses which needs no dilating upon, and must in all competitions give her superiority. Possessed of great natural advantages, she has strengthened these by fifty years of accumulation of those artificial advantages of varied machinery, masses of skilled workmen, and diverse kind of manufactories, which like the various corps of a well-ordered army, support one another and give power and endurance to the whole.

The value of coal as a fuel, or as a generator of steam, depends very essentially upon the quantity of fixed carbon which it contains. As a general rule in the manufacture of iron, the quantity of coal is necessarily augmented in the same ratio that the yield of carbon is diminished. The same is the case where the manufacture of glass is concerned, and, in fact, wherever heat is a requisite in manufacturing.

Following those great essentials, reception of material, distribution of products and cheapness of fuel, comes cheapness and eligibility of sites for manufactories.

In Pittsburgh locations for building, combining the requisites of space, water, transportation facilities, and the best of those advantages already mentioned for obtaining fuel, are to be had in every direction around the two cities and the suburbs, at very reasonable prices and on accommodating terms.

On both sides of the Allegheny river run railroads, also on both sides of the Monongahela. Between the two runs the Pennsylvania railroad, while the Pittsburgh, Ft. Wayne and Chicago railway passes through nearly the entire length of Allegheny city. Along all these lines sites for factories are abundant, where facilities for the receiving of fuel and materials into the very mills and other workshops direct from the cars exists. Into many of those which are now constructed along these lines, side tracks run directly into the factory yards. Along the Monongahela or Allegeheny shipment, direct from the factories, by either water or rail, is practical and daily practiced. This facility has so much increased in the past ten years as to have caused almost a total abandonment of maintaining large warehouses by manufacturers, nearly all shipments being made from the factories, effecting a large saving in rents, which is not without its power in holding trade under close competitions.

In intimate connection with the advantages belonging to Pittsburgh is the salubrity of the location. The tables of mortality treating upon this are conclusive of the superiority on this point of this community; and, without doubt, the great health possessed by this manufacturing population weighs heavily in the summing up of the advantages of this location as a manufacturing point. Not only to the workman is the health of his family and of himself of importance, but to the manufacturer as well. The loss of income by three or four weeks' sickness suffered by a workman, or by the increased demands upon his earnings from frequent illness in his family, is seriously felt in the consequent deprivation of comforts, which the money lost from lost time, and necessarily expended in drugs and doctor's bills, would purchase. The lessening of such misfortunes is an object in the selection of his place of toil. To the manufacturer, whose profits often depend upon the skilled and unbroken labor of a set of hands, the loss from the forced substitution of green hands for competent ones, or the ragged running of his machinery from the forced depletion of his working force by illness, is also, especially if occurring when his order books are full, a great injury, not only to his profits, but to the smooth working of his business.

To the employer, therefore, as well as the employee, is the healthfulness of a location a subject of careful consideration; and there is no point, as statistics show, in the United States, possessed of all or any of the requsites for supporting a manufacturing community, which can in any way compare with Pittsburg for salubrity.

LUMBER AND ITS PRODUCTS.

There are, in the two cities, the following saw mills and lumber yards—the two being grouped together by reason of difficulty of separating their statistics:

Style of Firm.	Location.
Ed. Alcott	Fiftieth st.
Geo. Dithridge & Co.	
S. & W. H. Martin	258 Fifth av.
Edward Bindley	274 Fifth av.
Robt. Fair	Penn and Hiland avs., e e
Mellon Bros	Station st., e e
M'Cullough & Smith	226 Penn av.
Jas. Gillespie	21st and Railroad sts.
M'Quewan & Douglass	57 Penn st.
Wm. Dilworth, Jr	7th av. and Grant st.
R. M. Leonard	173 Penn st.
Willis Boothe	43d and Railroad sts.
G. A. Mundorf	23d and Mary sts., s s
Richey, Smith & Co	Corry & Killbuck sts.
D. L. Patterson	74 Beaver av.
Phillips & Mittenzwey	19th and River, s s
W. S. Tupy	11 Darrah st.
L. F. Martin	109 Lacock st.

Style of Firm.	Location.
Euwer Bros	Craig & Killbuck sts.
B. F. Rynd	74 Irwin av.
M'Kirdy & M'Ginness	180 Sandusky st.
John Nauls	69 Third st.
Jas. M'Brier	191 Sandusky st.
M'Brier, Dean & Co	Herr's Island.
Kopp & Voegtley	Main and Sycamore sts.
Rudolph & Zchudy	Ohio st. and Church av.
L. Estein	369 Ohio st.
F. Becker	100 East st.
C. C. Boyle & Co	Sandusky st. and River av.
Leonard, Walter & Son	115 River av.
Geo. Kim & Co	Carson st.
J. G. Fleishman	26th and Water sts.
Alex. M'Clure & Co	27th and Railroad sts.

These thirty-four firms employ 291 men, whose wages amount to $145,635. They use 55 horses and 43 wagons, and pile and saw over 55,000,000 feet of lumber, principally pine and hemlock; also about 15,000,000 lathes and 13,000,000 shingles. The value of this at the rate of the past year, is in the neighborhood of $1,370,000. The area of ground occupied is equal to sixty-three acres.

PLANING MILLS, SASH AND DOOR AND BOX FACTORIES.

Style of Firm.	Location.
Alex. Patterson	123 Preble av.
Mullen, Steen & Co	66 Lacock st.
Jas. Stedeford & Co	106 North av.
Trimble & Co	245 Beaver av.
Alex. Campbell	Manchester.
Jno. B. Ingham & Son	417 Rebecca st.
J. C. Patterson & Co	217 Lacock st.
Barker & Burton	44 Anderson st.
Charles & Co	288 North av.
M. Simon	Anderson and Robinson.
Grusch, Remmingsnyder & Co	75 Third st., Allegheny.
Chambers, Vandevort & Co	Pennsylvania av.
Geo. Noll	Cherry and Main st.
H. Omslaer	390 River av.
Reed Bros	323 River av.
Murphy & Diebold	36th Ward, s s
Greene & Coyle	Walnut and Bridge, s s

Style of Firm.	Location.
Paul, Cook & Co	46th and Hatfield sts.
M'Kimmon & Milligan	872 Penn av.
Robt. Marshall	7th and Bedford avs.
Hill, Patterson & Co.	Old av. and Boyd st.
W. F. Richardson	48 Water st.
A. Lewis	Grant and 7th av.
Slack & Sholes	Third st. and Penn av.
J. W. Miller & Co	1st and Penn sts.
Heath & Speer	3d st. and Duquesne way.
Wm. Dilworth, Jr.	7th av. and Grant st.
Kelly & Evans	Seventh av.
B. Schmidt & Co.	31st and Penn.
Geo. M'Kee	33d and Penn.
Saml. Logan	26th and Penn.
James B. Hill	953 Penn.
James H. Low	953 Penn.
G. A. Mundorf	23d and Mary sts.
South Side Planing Mill Co	20th and Mary sts.
Hahn, Harms & Co	17th and Jane sts.
Union Planing Mill Co	18th st. and Fox av.
A. Hays & Co	13th and Water.
South Pittsburgh Planing Mill Co.	3d and Chestnut sts.

These 38 firms employ 821 hands, whose wages amount to $462,966. They use 99 horses and 97 wagons. They consume 14,400 pounds of glue, 418 reams sand paper, 19,400 bushels of coal, 7,499 kegs of nails; and use 62 planers, 39 mortising machines, 34 tenoning machines, 253 saws, 60 moulders, 9 flooring machines, 5 sand papering machines, 20 blind tappers, 20 shapers, 3 pannel raisers—in all 394 machines used in the production of doors, sashes and flooring. They use 52,500,606 feet of lumber; and their products amount to $2,000,000. There is $894,703 capital in the buildings and machinery of the 38 establishments, which occupy an area of 49 acres.

The statistics of the two foregoing branches of the lumber trade strictly, are assigned in their aggregates as nearly as possible to the branch to which they properly belong. In some cases the same firm carry on all the branches and a further sub-division could not be arrived at, although it would perhaps be satisfactory to ascertain what were the statistics of each class of manufactures. It will be seen, however, that the direct lumber trade of the city is an important one; comprising 72 establishments, whose aggregate business is nearly three and a half millions of dollars, employing over eleven hundred men and paying out over $600,000 of wages, and occupying 112 acres of ground in their works.

CARRIAGE AND WAGON MANUFACTURING

Is another branch of Pittsburgh products that properly comes under the classification of lumber. Of this branch there is

Style of Firm.	Location.
F. W. Sawert & Co	Penn avenue and Eleanor.
J. G. Weir & Bros	Washington and Poplar.
J. W. Moore & Co	857 Liberty avenue.
Wm. M'Callen	250 Fifth avenue.
H. Lange & Bro	77 Diamond street.
Henry Schafer	79 Diamond street.
Chas. Blank	1210 Bingham street.
Jas. Miller	Eleventh and Washington.
Jno. Krebs	Smallman street.
Jacob Rush & Bro	304 Fifth avenue.
J. Albert & Bro	Penn and Hiland avenue.
Sam'l Blanck	Penn avenue, e e.
Weir & Shuman	68 Ridge avenue.
W. H. Cullers	18 Fayette street.
Pittsburg Wagon Works	180 Beaver avenue.
Gass and Walter	401 Beaver avenue.
Frederich Bechner	Park way.
West & Vogler	257 Robinson street.
F. & W. Beckert	340 Ohio street.
R. W. Hare	162 Penn avenue.
H. R. Davis	147 Penn avenue.
L. Gleisencamp & Co	75 Liberty street.
Sander, Lowden & Co	Sixth and Duquesne way.
G. A. Schnabel	Thirty-first and Penn avenue.
D. Gum	1146 Penn avenue.
C. West & Co	Duquesne way and Evans avenue.
C. Coleman & Son	near Suspension bridge.
Knoch & Lang	15 Sandusky street.
Gabriel Manufacturing Co	Jane and Eighteenth streets.
A. Krutz	45 Fourteenth.

These 29 establishments employ 400 hands, whose wages are $209,645. They consume 183,220 feet of the various descriptions of lumber; they use $12,000 worth of cloths, $19,600 worth of springs and axles, $12,750 worth of paints and varnishes, $43,500 worth of iron, $8,500 of leather; make and sell $479,000 of wagons and carriages.

FURNITURE.

There are now in Pittsburgh and Allegheny 11 manufactories, whose product is chiefly taken by the home demand.

Style of Firm.	Location.
Jos. Meyer & Son	412 Penn ave.
Christian Wetzel	505 Penn ave.
Close, Schoeneck & Co	10th and Penn ave.
G. H. Dauler & Sons	178 Smithfield st.
F. G. Weise	111 Fourth ave.
A. Milligan & Son	66 Smithfield st.
T. B. Young & Co.	21 Smithfield st.
A. Ortlieb	90 Diamond.
M. Seibert & Co	157 Grant st.
John M. Irwin	97 Smithfield st.
Henry Henck	Washington.

These 11 factories employ 300 hands, whose wages amount to $184,000 yearly. They consume among other items over 1,000,000 feet of the various kinds of lumber; use upholstery goods to the value of $60,000; hardware to the amount of $35,000; marble to the sum of $10,000. The annual sales of these eleven establishments amount to about $850,000, included in which, however, is some eastern work. In addition to this there are some ten other large furniture houses, whose stock is principally brought from the east, which do not claim to manufacture. These sales amount in the aggregate to about $500,000, and the entire furniture business of Pittsburgh and Allegheny may be stated at about $1,400,000. The manufacturing establishments occupy 110,677 square feet of area; and the capital in the machinery and buildings of their factories is over $200,000.

COOPERAGES

Are another of the manufactures that come under the lumber classification. The exact products and consumptions of this branch of business are difficult to definitely state, as many of the oil refineries have extensive cooperages in connection with their works. To separate the men, material consumed, wages paid, and other statistics, from out of those of the refineries, could not satisfactorily be done. In the following list therefore only those that are independent of connection with refineries are given. Of these there are nine:

Style of Firm.	Location.
J. M. Hemphill	112 North av.
C. Spratt	3d and Middle sts.
Wm. League	316 Penn av.
Geo. F. Schade	42d st.

Style of Firm.	Location.
Fred. Kober	Hickory av.
John Wunderbech	3d and Ferry.
Reed Bros.	323 River av.
A. Claney	26th and Smallman.
Alex. M'Clure	25th and Railroad.

These nine establishments employ 334 hands, whose wages are about $160,000. The proprietors give 512,000 barrels as the number manufactured in a year, and the value of their sales at $770,000, and their consumption of iron for hoops at $140,000. The cooperages occupy 203,436 square feet of ground. The statistics of this branch of Pittsburgh's manufactures are not full, by reason, as before stated, of many of the refineries carrying on cooperages as a part of their establishments, and the failure to obtain from others returns. The figures here given can only be looked upon as fragmentary. There are in the city two dealers in oil barrels and staves, whose statistics properly belong to this division of Pittsburgh's manufactures.

B. B. Moore	Duquesne way, 1867.
Duncan & Thomson	Duquesne way, 1872.

These firms handle 400,000 new barrels yearly, and 8,000,000 staves. In addition to the above cooperage, there is a special establishment.

THE PITTSBURGH KEG AND BARREL FACTORY COMPANY.

This is a chartered company, with a capital stock of $100,000. They manufacture barrels by a patent process, by which the whole barrel is simply one stave. The log from which the staves is to be made, is cut to the proper length, and the lengths steamed. They are then run through a machine, the knife of which cuts a sheet from round the log. The circular slab thus taken off is then run through other machines, which, by various cuts and shapings, gives the proper bilge, and cuts the chimes for the heads. The capacity of the works is 6,000 kegs and 1,000 barrels per day, and the establishment occupies a space of 136x304 feet, and there is $70,000 capital in the building and machinery employed in the business.

Another manufacture of lumber is

STAIR BUILDING.

In later years this branch of business has become quite an art. In the growing regard for architectural effects in building, which has increased with the wealth of the country and the ability of those building private dwellings to study taste and effect, rather than cost, the business of stair building has progressed a long distance from the clumsy, steep, tiresome stairs of early days. There are in Pittsburgh and Allegheny the following firms who make a specialty of the business. In addition to those, several of the sash and door factories embrace this business with their other :

Style of Firm.	Location.
Jos. Welsh & Co	66 Lacock st.
Wm. Peoples	144 Webster st.
A. Lewis	Grant and 7th av.
Wm. Boyd	Penn and Third.
W. H. Roessle	Penn and 26th.

These five establishments employ 65 hands, whose wages amount to about $36,000 a year, and their sales will amount to about $70,000 a year. They use 100 reams of sand paper a year, and 150 gross of screws, and some 200 kegs of nails. The lumber principally used by them is walnut, ash, oak and cherry. The factories occupy 26,000 square feet of ground.

There are also the following

WOOD TURNING AND SAWING.

Establishments which, as consuming lumber and producing articles of which it is the material, are properly classed in this division :

Style of Firm.	Location.
Wm. Guckert	178 Grant st.
Conkel & Cunningham	Cherry av near 5th av.
Jas. Paul	183 Lacock st.

These establishments employ 20 men, whose wages in the year amount to $12,350, and other products to $30,000. They use in the works 10 lathes, 10 saws, 3 boring machines, 1 rod machine, 1 mortising machine, 1 moulder and 1 planer. The capital in machinery is $9,500, and the area occupied by the works 4,966 square feet. They use 90,000 feet of lumber and 30 reams of sand paper.

BELLOWS MANUFACTURING

Is also classed among the manufactures of lumber, although the consumption of leather and iron is perhaps equal of each to the lumber used. There are the following firms :

Style of Firm.	Location.
D. K. Reynolds	89 Webster street.
Agnew, Somerville & Co	34 Water street.

These two establishments employ 8 men, whose wages average yearly $5,150. They manufacture 660 pairs of bellows, consume hardware to amount of $3,500 ; also 11,000 feet of leather, and other articles, as glue, buttons, paint and lumber. The value of their products is $26,600.

COFFIN AND CASKET WORKS.

There are two of this class of manufactures in Allegheny City, as follows:

Firm.	Established.	Location.
Wettach, Couch & Co.	1867	Market and Bayard.
Hamilton, Lemon, Arnold & Co.	1864	Mulberry street.

These two establishment, manufacture 45,000 coffins and caskets a year. They employ 240 hands, whose wages amount to $120,000 a year, and their sales average $430,000 annually. They use 2,500,000 feet of lumber a year, of which 1,000,000 feet is walnut, and the balance pine and poplar. Their consumption of hardware and trimmings amount to $80,000 a year. In the process of manufacturing they use 5 moulders, 5 sand-papering machines, 4 shapers, 18 saws, 3 planers. The factories occupy an area of 476×320 feet. The capital in buildings and machinery is about $150,000. The value of the lumber consumed is about $50,000.

Another industry by which lumber is manufactured into articles of commerce is the making of

MATCHES.

There is but one establishment of this kind in Pittsburgh. This business is carried on by G. W. H. Davis & Co., who employ 27 hands, to whom they pay wages to the amount of $8,060. They use 100,000 feet of lumber, 5,500 pounds of glue, 500 pounds of phosphorus, 10,000 pounds of brimstone, 12 tons of paper for boxes; make 30,000 gross of matches yearly, the sales of which amount to $67,000. The factory was established in 1856 by A. J. Griggs.

There are other minor manufactories which consume lumber: such as wooden pump making, skiff building, spar and oar making, but of which no statistics could be obtained; or when obtained were so deficient as to not be worth the presentation. From those here printed it would appear that the manufactories of Pittsburgh and Allegheny consuming lumber, and the crude lumber business, employ 2,488 hands, whose annual wages will amount to $1,281,560; while the space occupied by the various works and yards is equal to 129 acres of ground; and the capital in machinery and buildings alone is $1,323,203; and the total value of the products at present rates is $7,542,600. It is more probable that, including those other branches of manufactures which belong to the division of woods, whose statistics could not be disintegrated from the other classes of manufactures in which they are absorbed, among which are the cooperages carried on by the refineries, that this division of business will exceed eight millions in value.

THE GLASS FACTORIES OF PITTSBURGH.

The first glass house in Pittsburgh is said to have been in operation in 1795, and was located at what is now called Glass House Ripple, in the Ohio, being in the Thirty-fifth ward of the city of Pittsburgh. Who built the works, or under what circumstances they were begun, there is no record to show, beyond the statement of one of the earliest workmen in glass in Pittsburgh, cited in a subsequent paragraph. It is, however, of record, that arrangements for the manufacture of this article were commenced at Pittsburgh by General James O'Hara, in company with Major Isaac Craig, in 1796. Mr. Wm. Eichbaum, of Philadelphia, was engaged to direct the erection of the works. We extract from a letter written by Major Craig, dated "Pittsburgh, June 12, 1797," to "Col. James O'Hara, Detroit," published in Craig's History of Pittsburgh, the following remarks in relation to the first movement: "I then took Mr. Eichbaum up the coal hill, and showed him the coal pits, called Ward's pits, and the lots on which they are, with all of which he was well pleased, both as to the situation and convenience of materials for building. I therefore immediately purchased of Ephraim Jones the house and lot near the spring, for one hundred pounds, and have made application to Ephraim Blaine for the two adjoining lots, which no doubt I will get on reasonable terms. These three lots are quite sufficient, and we are now quarrying lime and building stone, both of which are found on the lot. James Irwin is engaged to do the carpenter work; scantling for the principal building is now sawing; four loghouse carpenters are employed in providing timber for the other buildings, and I am negotiating with a mason for the stone work." Although this enterprise of General O'Hara and Major Craig is usually considered the first step toward the creation of our present glass business, yet the author of this volume was informed over twenty years ago by William M'Cully, the founder of the present house of Wm. M'Cully & Co., one of our oldest glass manufacturers and a practical workman, having learned his trade in the glass house of General O'Hara, that in 1795 there was a small window glass factory at what is now called Glass House Ripple, on the west side of the Monongahela, known in the early times as "Scott's," having an eight pot furnace. The making of glass was carried on with wood, and there was made three boxes to a blowing.

The first glass house of General O'Hara had but eight pots, whose capacity was equal to three boxes to a blowing. To his perseverance Pittsburgh is indebted for the establishment of this important branch of her manufactures, Major Craig having declined any further connection in the business in 1798. He built in 1802 additional glass works, and made preparations to carry on the flint glass business, sending an agent to England for the purpose of procuring workmen, but the person returned unsuccessful from his mission.

The success of these pioneer works is to be inferred from an article in Cramer's Almanack for 1804, which in an enumerative article on the manufacturing trade of Pittsburgh for 1803, contains the following lines:

"Glass, window bottles, jars, decanters, blue glass, $12,5000.

"Glass cutting. N. B.—Equal to any cut in the States of Europe—$500."

The establishment of the manufacture of window glass west of the mountains is due, however, to the enterprise of the celebrated Albert Gallatin, who in 1787, in conjunction with a Mr. Nicholson and two Messrs. Kramers, (Germans), began the manufacture of window glass at New Geneva. This firm obtained from $14 to $20 per box for their glass and maintained high prices for a length of time, in opposition to the advice of Mr. Gallatin who wished to put the price down to $4 50 per box, giving as his reason that the enormous prices the firm were obtaining would soon invite competition, whereas the rate of $4.50 per box would not invite rivalry, and the business remaining in their hands alone would be sufficiently remunerative. This shrewd advice was overruled, and through competition the prices declined to $8 per box, when the firm ceased manufacturing.

A number of the workmen of the eastern factories came from Frederick, Maryland, at which place the Messrs. Amlung erected large window glass factories somewhere between the close of 1798 and 1802 or 3. The Messrs. Amlung were unsuccessful, and the works being discontinued, many of the workmen came to Pittsburgh.

In 1807 the products of O'Hara's glass factory are recorded as valued at $18,000. In 1807 George Robinson, a carpenter by trade, and Edward Ensell, under the style of Robinson & Ensell, commenced the manufacture of flint glass, but owing to disagreements in the firm, transacted little or no business; and in 1808 they were bought out by Messrs. Bakewell & Page, by which house the manufacture of flint glass has been continued to the present time; being now known under the style of Bakewell, Pears & Co.

In 1810, according to "a cursory view of the principal manufactures in and adjacent to Pittsburgh," there were three glass works "in handsome operation" producing flint glass to the value of $30,000, and bottles and window glass to the value of $40,000. At the same date it is also mentioned of glass cutting: "This business has been recently established by an ingenious German, (Eichbaum,) formerly glass cutter to Louis XVI, late King of France. We have seen a *six light chandelier*, with prisms, which does credit to the workman and reflects honor on our country, for we have reason to believe it is the first ever cut in the United States."

In 1813 the number of glass factories had increased to five, producing glass to the value of $160,000.

In 1826 there were in operation in Pittsburgh and vicinity, seven glass works, viz:

	Boxes.
O'Hara's two works, called Pittsburgh Glass Works	6,000
"Birmingham," opposite Pittsburgh	4,000
New Albany, at mouth of Redstone creek, four miles below Brownsville	4,000
"Benedict Kimber," at Bridgeport or Brownsville	4,000
"New Boston," at Perryopolis on Youghiogheny	2,000
Williamsport, occupied by W. Ihmsen	3,000
Geneva Works, established by Albert Gallatin	4,000
	27,000
Valued at	$135,000
In addition to which was made flint glass to the value of	30,000
	$165,000

In 1831 there were eight glass works, four producing flint and four producing window and green glass, to the value of $500,000. In 1837 there were thirteen glass factories, six of which were flint glass works, and the balance green and window glass, making about $700,000 worth of glass. Among these were the Sligo works of William M'Cully, established in 1828, and continued at the present day by W. M'Cully & Co. The flint glass works of Curling & Price, known as the Fort Pitt Glass Works, established in 1830, now carried on by their successor, E. D. Dithridge & Co. The window glass factory of F. Lorenz, now continued by Thos. Wightman & Co. Twenty years afterwards, in 1857, there were thirty-three factories at Pittsburgh, of which nine produced flint glass and twenty-four window, green and black glass, to the value of $2,631,990. Employing 1,982 hands, whose wages were $910,116, and they consumed material to the amount of $2,078,734 40.

In 1865 there were fifteen bottle and vial factories, fifteen window glass factories and fifteen flint glass works in Pittsburgh, being forty-five glass works in all, an increase of forty per cent. in number in eight years.

Those fifteen window glass works, located immediately at Pittsburgh, had a capacity to make 520,000 boxes of glass a year, but their average yield is about 400,000 boxes, whose entire value at that time was orks produced annually about 420,000 gross, or 60,480,000 of vials and bottles, worth at rate then

$2,100,000. The pressure upon these works at that time is best shown by the fact that, although only customary to run them for ten months in the year, yet many of them had ran twenty-one months without stopping.

The fifteen flint glass works then in operation at Pittsburgh, produced about 4,200 tons of glassware, worth then, in round numbers, two millions of dollars. Their capacity was, however, double the amount produced, or about 8,000 tons.

The present status, *eighty* years after the manufacture of glass was begun at Pittsburgh, the following tables show. No branch of the business of Pittsburgh shows a more steady increase. To-day Pittsburgh is the great glass market of the United States, as she is of iron and steel. The facilities for manufacturing glass at Pittsburgh are not surpassed any where, and there is but little doubt that the long stretch she is ahead in the manufacturing of glass in the United States, will continue to be maintained. The introduction of the natural gas mentioned in the chapter on the manufacturing advantages of Pittsburgh, will, without question, do as much for this branch of manufacture as for others, where cost of fuel and quality is involved.

There are now at Pittsburg the following

WINDOW GLASS FACTORIES:

Firm.	Office.	Establish'd	Furnaces..	Pots......	Factories..
Thos. Wightman & Co	43 Wood street	1796	3	30	3
C. I. Ihmsen	....	1810	1	20	1
Wm. M'Cully & Co	20 Wood street	1824 1854	2	20	2
S. M'Kee & Co	62 Water street	1836	2	20	2
R. C. Schmertz	97 First avenue	1836	2	16	2
A. & D. H. Chambers	6 Bingham street	1841	3	30	3
Cunningham & Ihmsen	109 Water street	1849	2	20	2
Wolfe, Howard & Co	4 Wood street	1859	1	10	1
Wells	....	....	1	10	1
Stewart, Estep & Co	Jane and 22d	1866	2	16	2
Duff & Campbell	110 Water street	1866	1	10	1
Phillips & Co	19th and Mary	1866	1	10	1
Knox, Kim & Co	70 Carson street	1867	2	14	2
Iron City Window Glass Co	69 Water street	1874	1	8	1

These 24 factories employ 1,200 hands, whose wages amount to $1,000,000 annually. They consume 19,200 tons of sand, 7,200 tons of soda ash, 4,800 tons of lime, 2,400 tons of fire clay, 8,400,000 feet of lumber, 2,445,600 bushels of coal and coke, 750 tons of straw, 1,680 barrels of salt, 3,400 cords of wood, and nails, iron and castings to the amount of $10,000. They work 44 horses, and employ 36 wagons in hauling. They produce 840,000 boxes, of fifty feet each, of window glass per year, weighing 29,400 tons, whose value at present rates is $2,500,000. The works occupy a space of 47 acres, and there is $1,557,000 of capital in the buildings, machinery and ground.

The manufacture of window glass was the earliest established here, and the amount manufactured is quite one-half of all made in the United States. The largest size of double strength is made from 4 in. by 5 in. up to 42 in. by 78 in.

The market for the productions of the window glass of Pittsburgh is constantly extending. The tables given of the shipments by rail in 1864-5, showing the reach of this trade throughout the United States, would be much augmented if similar tables of the past three or four years were compiled. In the south-eastern States especially the increase has been marked. The facilities for the production of glass at Pittsburgh, as before stated, are unsurpassed, and with the facilities, skill and experience which eighty years of window glass manufacturing has accumulated here, combined with the mineral facilities, the transportation advantages that exist, Pittsburgh must remain, as she always has been, the great window glass market of the United States.

There are also the following

CRYSTAL OR TABLE GLASSWARE FACTORIES.

Firm.	Office.	Establish'd	Furnaces..	Pots......	Factories..
Bakewell, Pears & Co.	8th and Bingham.	1808	2	20	2
O'Hara Glass Co	30th and Railroad.	1837	2	20	2
Adams & Co	10th & Williams..	1851	2	21	2
Bryce, Walker & Co	95 Water street...	1850	3	31	3
M'Kee Bros	....	1850	4	40	4
Campbell, Jones & Co.	87 Water street...	1863	2	20	2
Plunkett & Co	14th & Breed, s s..	1863	1	10	1
Challiner, Hogan & Co.	8th & Washingt'n.	1864	1	10	1
King, Son & Co	18th street, s s....	1865	2	20	2
Richards & Hartley Flint Glass Co.	Pride & Marion...	1866	1	10	1
Doyle & Co.	10th & Washingt'n	1866	1	10	1
Rippley & Co	8th and Bingham.	1866	1	10	1
Geo. Duncan & Son	10th near Carson..	1866	2	20	1
Crystal Glass Co	16th & Washingt'n	1869	2	20	2

These twenty-four crystal glass factories manufacture all descriptions of table ware in almost endless variety of articles and styles. They employ 1,895 hands, to whom they pay $1,233,000 wages. They use 3,060 tons soda ash, 11,700 tons sand, 760 tons nitrate soda, 600 kegs nails, $4,000 of bar iron, 825,760 bushels of coal, 150,560 bushels of coke, boxes to the value of $130,450 for packing, 35,475 bushels of lime, 2,460 tons of straw. The capital in the buildings, machinery and grounds is $1,304,587, and the space occupied by the buildings, &c., is 109 acres. They work 34 horses and use 23 wagons. They produce 15,000 tons glass, worth $2,250,000.

There are also four

FLINT (VIAL AND BOTTLE OR DRUGGIST) GLASS WORKS.

FIRM.	Office.	Establish'd	Furnaces..	Pots.....	Factories..
Wm. M'Cully & Co.	20 Wood	1855	2	17	2
W. H. Hamilton & Co.	26 Wood	1863	2	18	2
Agnew & Co	153 First avenue	1866	2	11	2
Tibby Bros.	13 Wood st.	1866	2	20	2

These eight factories occupy a space of seven acres, and the capital in buildings, machinery and grounds is $191,000. They employ 619 hands, whose wages amount to $395,000 a year. They consume 900 tons soda ash, 3,250 tons sand, 23,500 bushels of lime, 210 tons nitrate of soda, 60,000 bushels of coke, 371,000 bushels coal, 610 tons of straw, 50,000 fire brick, 90 tons fire clay, boxes to the value of $50,000, for packing, 14 tons of iron, 250 kegs of nails, employ 16 horses and 10 wagons in hauling. They produce bottles and vials worth about five hundred thousand dollars.

There are also eleven

GREEN GLASS WORKS.

FIRM.	Office.	Establish'd	Furnaces..	Pots.....	Factories..
Thos. Wightman	43 Wood st.	1837	2	12	2
S. M'Kee & Co.	62 Water st.	1836	1	7	1
A. & D. H. Chambers	6th and Bing'm	1841	2	12	2
Cunningham & Ihmsen	109 Water st.	1849	1	8	1
Wm. Frank & Son	92 First ave.	1854	1	6	1
Wm. M'Cully & Co	20 Wood st	1833	2	14	2
Phillips & Co.	19 and Mary st.	1866	1	8	1

These 11 green glass or bottle factories manufacture all descriptions of green and black bottles, fruit jars and similar articles. They employ 944 hands, whose annual wages amount to $566,000. They use 3,450 tons of soda ash, 12,050 tons of sand, 66,400 bushels of lime, 1,060 barrels of salt, 465 tons of pot clay, 625 kegs of nails, 22 tons of iron, 65,000 fire brick, 86,000 bushels coke, 940,000 bushels coal, 625 cords wood, 1,560 tons straw, boxes and barrels to the value of $107,000 for packing, and employ 21 wagons and 36 horses in hauling. The works occupy a space of 18 acres, and the capital in machinery, buildings and ground is about $925,000. The value of the product is $1,350,000.

There are also nine

GLASS CHIMNEY FACTORIES.

FIRM.	Office.	Establish'd	Furnaces..	Pots......	Factories..
Dithridge & Co	Washington st....	1830	2	20	2
Excelsior Flint Glass Co	8 Wood st.........	1863	1	10	1
Evans, Sell & Co	22d & Josephine ..	1869	2	20	2
Keystone Flint Glass Manufacturing Co	3d and Try sts....	1872	1	10	1
Kunzler & Co	Foot 17th st., s s...	1874	2	20	2
James Lindsay & Co	6 Wood st.........	1872	1	10	1

These 9 factories occupy a space of 27 acres, and the capital in buildings, machinery and ground, is $260,000. They employ 790 hands, whose wages amount to $365,000 a year. They consume 325 tons pearl ash, 480 tons of lead, 600 tons soda ash, 278 tons nitrate of soda, 2,340 tons of sand. They burn 469,000 bushels of coal, 60,000 bushels coke; use 725 tons straw for packing, about $12,000 worth of pots for the furnaces; also, $58,000 worth of boxes and barrels for packing, and about 250 cords of wood. They produce annually about 16,200,000 chimneys worth $600,000.

This is a branch of the glass making of Pittsburgh, which owes a great increase to the introduction of petroleum, and is one of the additional sources of wealth which the utilizing of that mineral substance opened to Pittsburgh.

All the flint glass chimnies made in the United States are manufactured at Pittsburgh, and four-fifths of all other kinds.

From the foregoing exhibit of the five divisions of glass manufacturing in Pittsburgh, it appears that the total of factories is 73, having 690 pots. There are employed 5,248 hands, whose wages average annually $3,479,000. The total material consumed amounts to 12,110 tons soda ash, 48,340 tons of sand, 152,000 bushels of lime, 1,218 tons of nitrate of soda, 793,560 bushels of coke, 4,523,760 bushels of coal, 4,025 cords of wood, 6,055 tons of straw, 2,760 barrels of salt, 250 tons pearl ash, 360 tons lead, 150,000 fire brick, 2,955 tons German clay, 2,100 kegs of nails. They employ 96 wagons and 130 horses in hauling, and pay $484,250 for packing boxes. The space occupied by the buildings is equal to 208 acres; and the capital in buildings, machinery and grounds is $4,137,587. The entire value of the products will average, at present rates, $7,500,000.

THE COAL BUSINESS OF PITTSBURGH.

Coal was known in England as early as A. D. 853, and was applied to economical purposes about the middle of the twelfth century. In Belgium according to tradition, a blacksmith discovered the value of coal as a fuel, in 1198; and in 1239 the men of New Castle, England, were granted the privilege of digging coals by King Henry III.

From old writers upon the subject, it appears that the mining of coal was, in the early days of its introduction as a fuel, conducted under special charters. Its extraction in Belgium was prior to the fifteenth century, subject to the control and supervision of an especial court; and in Scotland, one of the *privileges* granted to a religious house in A. D. 1291, was that of mining coal.

The adoption of coal as a substitute for wood was gradual, and many prejudices had to be dissipated before the use of it became general.

In Paris, the medical faculty was employed in the beginning of the fifteenth century in making a decision of how far this new description of fuel was injurious to health; and in the early part of the sixteenth century the citizens of the London petitioned Parliament against the use of coals. Proclamations were issued in the reigns of the first Edward, of England, and of Queen Elizabeth forbidding the use of coal during the sitting of Parliament, lest the health of the Knights of the Shire should suffer from its consumption, during their residence in London.

It seems incredible that a human being should be condemned to suffer death for burning coal, yet history records that a citizen of London, for violation of a stringent law prohibiting its use in England, was executed. So great an evil was once deemed that mineral, now considered so great a good, that the value of the yearly extraction from the deposits of that mineral in Great Britain, Belgium, France, Prussia and Pennsylvania was, in 1848, estimated at $145,200,000, and every year since has largely increased the demand and supply.

Taylor in his coal statistics, computes that the above mentioned sum is "nearly nine times the annual value of the gold and silver exported from Mexico, or six times that of the gross produce of the precious metal in North and South America and Russia." A momentary consideration of the immense excess in value, which is thus shown to be possessed by coal over the gold and silver of the world, fully prepares the mind to admit that Pittsburgh is richer in her coal fields than the balance of the world, in all their deposits of precious metals.

The extent of the bituminous coal field by which Pittsburgh is surrounded in her own State, and from which she derives revenue, is 15,000 square miles—being equal to 8,600,000 acres. The amount of coal contained in that area, it is extremely difficult to estimate, because of the variations of strata, and want of reliable information as to the number of workable coal veins to be found in the same depth from the surface reached by the English and French mines. The upper, or Pittsburgh seam alone, would, estimating it at an average of eight feet in thickness, contain in that area 1,498,464,000,000 bushels, or 53,516,430,000 tons of coal—the value of which, at an average rate of five cents per bushel, would be worth $74,923,200,000, or more than the bullion production of the United States, at its present rate of $70,000,000 annually, would amount to in one thousand years.

The tract of ground containing such a value of mineral, was purchased by the proprietors, as the Penn family and their coadjutors were styled, in 1768 and 1784—one hundred years ago, *for the sum of* $10,000.

As the purport of this chapter is only to show the statistics of the coal trade of Pittsburgh, so far as they can be obtained, it is not to the purpose to present the area of the coal field of Pittsburgh in comparison with those of other States, nor its quality. In the chapter on the "Mineralogical Position of Pittsburgh," those things are presented.

In Pittsburgh coal appears to have been used as early as 1784, and was then mined from the hill immediately opposite the city, where the Penns granted the privilege at £30 a lot, "to dig coal as far in as the perpendicular line falling from the summit of the hill."

From that day to the present, Coal Hill, as it is familiarly called, has furnished large quantities of fuel to this locality; and at no point has coal of a better quality, for all purposes for which it is used, been discovered. The importance of this mineral, and its value to Pittsburgh, is so largely dwelt upon in the chapters of this work devoted to the mineralogical position of the city and its manufacturing advantages that it is unnecessary to remark further here upon the subject. The extent to which it is mined, the cost of its extraction, and the various expenses attendant upon taking it to market, are points which the distant reader will be gratified to find discussed under the title heading this section of the volume.

Until 1850 all the coal exported from this city was floated down the river in large flat-bottomed boats, which were usually one hundred and twenty-five feet long, sixteen feet wide, and eight feet deep, with flat perpendicular sides, bow and stern. Each boat of this size holds about 15,000 bushels of coal, and they were floated to their destination lashed in pairs. The usual complement of hands for such boats was twenty-three or twenty-four. These boats could only be floated down the river, or as it is technically termed, "run," in the high floods that generally, from time to time, in the spring and fall of each year, swell the current of water in the Ohio river. Of late years a system of towing has been introduced by barges and steamboats constructed expressly for the trade, which, being adopted, has caused the Pittsburgh "coal boat" to disappear from the waters of the Ohio and Mississippi rivers.

The towing of coal was begun in 1850, the "Lake Erie" making three trips with four barges each time, carrying 16,000 bushels. She was, in

March 1851, followed in the trade by the "Black Diamond," owned by N. J. Bigley, carrying 20,000 thousand bushels in four barges, from which time the towing of coal has been successfully carried on

It is from the four pools of the Monongahela river that the large proportions of the coal barges start upon their voyage to points below. It is however, in the harbor of the city of Pittsburgh that the coal tows so called are formed. These tows consist of twelve barges and one steam tow boat. The barges are of an average measurement of four hundred and fifty tons, and the steam tow boats average one hundred and fifty tons admeasurement. The barges hold an average of twelve thousand bushels of coal, and are of an average length of one hundred and thirty feet, and twenty-four feet in breadth, and cost from $500 to $1,000 each. Of these barges twelve are lashed to the steamer; one being lashed to each side, while ten are placed in front, five in length and two wide, being literally shoved along instead of towed. This whole mass of boats and coal is firmly attached by lashing in one body, of which the steam tow boat is the rear centre, and propels the flotilla from the interior of the mass, instead of dragging it along, as might be supposed from the term towing, which is the popular term for this mode of taking coal to market. The bulk of coal thus moved in one of these tows, so called, varies from 100,000 bushels to 130,000 bushels, and is the product of an acre or an acre and a half of coal. Each of these tows requires the services of an average of twenty-four hands, whose wages average about sixty dollars a day. The time usually employed in going to Cincinnati with one of these tows is four days, and to Louisville five days. It takes two more days to make the return trip. To New Orleans the time is two weeks, and the return trip between three and four weeks. The average cost per barge for towing to Cincinnati is $75, and to Louisville $110. The stores and provisions for the round trip cost about $200. These tow boats consume an average of 1,000 bushels of coal, costing five cents a bushel, each day while running.

As before stated the great bulk of the coal that is in this manner transported to the markets below Pittsburgh, is taken from the collieries on the Monongahela river, which is slackwatered, and divided into six pools. It is from the first four of these, ascending the river about sixty miles, that at present the bulk of the coal mined and loaded on that river is taken. The following tables show the collieries in those four pools and their details. It is proper here to state, however, that *the acres of coal given in the table only represents the number of acres remaining in the original tract* belonging to the collieries when first established. In most cases these collieries own the river fronts, and there are large tracts of coal lying back of those now being worked out]

TABLE *No.* 1 *of Collieries in Pool No.* 1, *Monongahela river, showing;*

FIRM.	Estab'd	Address.	Hands.*	Bush. Mined
H. B. Hays & Bro	1828	142 Water st.	500	4,000,000
Joseph Walton & Co	1863	134 Water st.	175*	1,500,000*
Corry & Co	1865	6 av. & Wood.	75	1,500,000
A. H. Kenny & Co	1835	Braddocks	70	500,000
Redman & Fawcett	1849	87 Water st.	140	1,500,000
J. D. Risher	1860	Hope Church.	125	1,800,000

* The discrepancies in amount of coal mined as compared with number of hands, arise from some collieries working greater number of days and less force, making a greater "out-put."

TABLE *No.* 2 *of Collieries in Pool No.* 1, *showing :*

FIRM.	Wages.	Houses.	Value.	Pit Wagons.	Value.	Improvements.	Horses.	Mules.
H. B. Hays & Bro	$160,000	200	$100,000	500	$15,000	$300,000	10	20
Joseph Walton & Co	60,000	25	15,000	160	4,800	30,000	....	10
Corry & Co	50,000	15	7,500	100	3,000	60,000	3	15
A. H. Kenny & Co	48,000	6	2,400	45	1,350	5,000	....	6
Redman & Fawcett	60,000	50	20,000	100	3,000	45,000	....	10
J. D. Risher	56,000	45	22,500	125	3,750	34,000	....	11

TABLE *No.* 3 *of Collieries in Pool No.* 1, *showing :*

FIRM.	Acres Coal.	Miles Pit Track.	Tow B'ts.	Value.	Barges.	Value.	Flats.	Value.	Locomotives.	8 wheel cars.
H. B. Hays & Bro	3,500	30	...†	....	....	....	....	....	3	....
Joseph Walton & Co	150	3	6	$148,000	140	$140,000	36	$14,400	1	....
Corry & Co	40	1	....	....	....	....	....	....	....	40
A. H. Kenny & Co	5	1½	....	....	4	1,600	3	900	....	....
Redman & Fawcett	110	4*	....	....	....	....	8	2,400	....	....
J. D. Risher	110	3	....	....	....	....	....	....	1	....

*T Rail. † See Hays Coal Company.

TABLE *No.* 1, *of Collieries in Pool No.* 2, *Monongahela River, showing :*

FIRM.	Colliery Estab'd.	Office.	Men.	Bushels Mined Yearly.
Joseph Walton & Co	1855	134 Water	175	1,500,000
Joseph Walton & Co	1870	134 Water	175	1,500,000
G. & W. Jones	1848	Smithfield & 1 Av.	90	800,000
O'Niell & Co	....	118 Water street	....	....
Foster, Clark & Wood	....	69 Water street	125	1,000,000
Lynn, Wood & Co	1850	69 Water street	150	1,600,000
Wm. Stone's Estate	1856	141 Water street	150	2,000,000
J. C. Risher	1866	160 First avenue	100	1,000,000
J. C. Risher & Co	1852	160 First avenue	100	1,000,000
Geo. Lysle & Sons	1855	80 Water street	175	1,250,000
Culp & Gamble	1850	Coal Valley	100	1,400,000
Horner & Roberts	1859	64 Water street	200	2,000,000
Robert Wood	1870	Elizabeth	150	1,200,000
Farrow, Gumbert & Co	1858	10 Smithfield	125	1,600,000
Robbins & Jenkins	1851	69 Water street	120	1,000,000
Wm. Neil	1846	M'Keesport	25	400,000
Wm. Neil	1846	M'Keesport	60	480,000
Neil & Oliver	1843	M'Keesport	125	2,000,000
Wm. H. Brown	1846	25 Smithfield	325	4,000,000

TABLE *No. 2 of Collieries in Pool No. 2, showing:*

FIRM.	Yearly Wages.	Horses.	Value.	Pit Wagons.	Value.	Improvements.	Horses.	Mules.
Joseph Walton & Co....	$64,000	40	$24,000	140	$4,200	$45,000	3	17
Joseph Walton & Co ...	64,000	60	36,000	160	4,800	80,000	....	10
G. & W. Jones	32,000	8	8,000	84	2,520	25,000	1	9
O'Neil & Co	....	...	....	....	....	....	....	....
Foster, Clark & Wood ..	40,000	10	4,000	100	3,000	31,400	....	10
Lynn, Wood & Co	80,000	75	37,500	200	6,000	105,000	6	12
Wm. Stone's estate	80,000	35	21,000	210	6,300	50,000	8	12
J. C. Risher	84,000	60	15,000	115	3,450	1,500	....	12
J. C. Risher & Co	84,000	40	16,000	120	3,600	20,000	....	12
Geo. Lysle & Sons......	96,000	46	18,400	150	4,500	253,000	1	11
Culp & Gamble	64,000	35	7,000	70	2,100	15,000	....	7
Horner & Roberts.......	88,000	70	33,600	180	5,400	40,000	1	10
Robert Wood	80,000	22	16,500	143	4,290	60,000	....	7
Farrow, Gumbert & Co .	70,000	18	9,000	146	4,300	40,000	3	9
Robbins & Jenkins.....	60,000	33	16,500	125	3,750	18,000	4	8
Wm. Neil..............	16,000	20	10,000	40	1,200	25,000	....	2
Wm. Neil..............	40,000	12	6,000	84	2,520	20,000	....	6
Neil & Oliver..........	80,000	6	1,200	136	4,080	25,000	....	8
Wm. H. Brown	128,000*	150	37,500	275	8,250	45,000	....	20

* 25 Coke ovens, worth $6,250, producing 500,000 bushels of coke a year.

TABLE *No. 3, of Collieries in Pool No. 2, showing:*

FIRM.	Acres Coal.	Miles Pit Track.	Tow Bts.	Value.	Barges...	Value.	Flats....	Value.	Locomotives..
Joseph Walton & Co.......	200	3	...*	....	......	....	...	....	1
Joseph Walton & Co.......	200	5	...*	....	......	....	...	....	1
G. & W. Jones............	100	1	1	$3,000	10	$5,000	8	$1,600	....
O'Neill & Co	......	......	4	35,000	......	....	...	....	....
Foster, Clark & Wood	240	3	....	....	......	....	10	2,500	....
Lynn, Wood & Co.........	325	3	4	39,000	......	....	...	....	1
Wm. Stone's Estate.	350	3	3	48,000	90	72,000	20	8,000	....
J. C. Risher..............	450	5	4	103,000	113	56,500	24	6,000	....
Geo. Lysle & Co...........	300	3	2	55,000	45	31,500	10	3,000	....
Culp & Gamble............	15	3	....	....	6	3,000	6	1,800	....
Horner & Roberts..........	700	4	....	....	......	....	8	2,800	1
Robert Wood..............	70	3	....	....	......	....	7	2,100	1
Farrow, Gumbert & Co....	275	3	1	28,000	......	....	2	800	....
Robbins & Jenkins........	140	4	1	....	......	....	6	2,400	....
Wm. Neil.................	10	2	2	40,000	40	40,000	4	1,600	....
Wm. Neil.................	10	2	....	....	......	....	...	....	....
Neil & Oliver.............	225	3	....	....	40	32,000	4	1,200	....
Wm. H. Brown †..........	550	15	8	200,000	278	270,000	47	14,100	1

† See Pool No. 3. * See Pool No. 1.

TABLE *No.* 1, *of Collieries in Pool No.* 3, *of Monongahela River, showing:*

FIRM.	Estab'd..	Office.	Men.	Bushels Mined Yearly.
Iron City Coal Co	1864	21st street, s. s	75	1,200,000
Hedgens & Co	......		40	600,000
Wm. C. Guffy	1859	136 Water street	50	600,000
Jno. Gilmore	1876	120 Water street	75	800,000
Jacob Tomar, Jr	1859	Webster	50	700,000
Robbins, Lynn & Co	1862	120 Water street	40	800,000
Harlem Coal Co	1872	Monongahela City	40	500,000
Stoft & Cocain	1875	165 2d avenue	40	600,000
Harlem Coal Co	1848	Monongahela City	50	700,000
Staib & Co	1860	....do........do.	50	700,000
Harlem Coal Co	1857	....do........do.	85	1,000,000
Robison Bros	1863	Allegheny	50	1,500,000
Wm. H. Brown *	1858	25 Smithfield	200	1,500,000
Whigham, Bailey & Co	1856	Water street	60	800,000
Hiram Warne	1863	Monongahela City	65	500,000
Wm. H. Brown *	1861	25 Smithfield	125	700,000
Lindsey, M'Cutcheon & Griers	1873	Allegheny	90	680,000
Henry Lloyd	......	Pittsburgh	40	400,000
Jno. Dippold	1852	......do.	100	800,000
J. P. Walters & Co	1852	......do.	100	800,000
Jno. D. Negley	1852	......do.	60	720,000
Miller Greenhalgh & Co	1845	120 Water street	80	....
Louttit, Skillen & Co	1848	Elizabeth	30	400,000
Hodgson & Mort	1873	Coal Bluff	125	800,000

*See Pool No. 2.

TABLE *No.* 2, *of Collieries in Pool No.* 3, *showing:*

FIRM.	Wages.	Houses..	Value.	Pit cars..	Value.	Improvements..	Horses..	Mules...
Iron City Coal Co	$40,000	32	$10,000	60	$1,800	$8,000	....	8
Hedgens & Co	8,000	16	3,200	40	1,200	3,000	....	5
Wm. C. Guffy	20,000	22	4,400	52	1,560	5,000	1	4
Jno. Gilmore	40,000	33	6,900	64	1,920	8,000	6	8
Jacob Tomar, Jr	24,000	12	1,800	45	1,350	2,500	....	6
Robbins, Lynn & Co	28,000	17	3,800	75	2,250	3,000	....	4
Harlem Coal Co	16,000	6	1,800	40	1,200	15,000	....	2
Stoft & Cocain	28,000	1	1,000	28	840	7,000	....	6
Harlem Coal Co	12,000	10	4,000	60	1,800	5,000	....	6
Staib & Co	12,000	32	9,600	60	1,800	5,000	...	6
Harlem Coal Co	36,000	8	3,200	75	2,250	10,000	....	7
Robison Bros	24,000	18	7,200	40	1,200	16,000	9	5
Wm. H. Brown	48,000	70	28,000	150	4,500	9,000	....	10
Whigham, Bailey & Co	70,000	25	7,500	110	3,300	....	8	....
Hiram Warne	24,000	40	12,000	37	1,110	....	....	4
Wm. H. Brown	30,000	35	14,000	100	3,000	10,000	....	6
Lindsay, M'Cutcheon & Co	30,000	23	7,500	80	2,400	25,000	....	4
Henry Lloyd	16,000	....	....	60	1,800	10,000	....	8
Jno. Dippold	32,000	20	9,000	85	2,550	10,000	...	7
J. P. Walters & Co	28,000	20	5,000	75	2,250	39,500	....	7
John D. Negley	24,000	40	10,000	68	1,840	7,000	....	4
Miller, Greenhalgh & Co	40,000	40	12,000	100	3,000	25,000	....	5
Loutitt, Skillen & Co	13,000	15	3,000	27	810	3,000	1	3
Hodgson & Mort	....	18	18,000	75	2,250	....	....	3

TABLE *No.* 3, *of Collieries in Pool No.* 3, *showing:*

FIRM.	Acres Coal.	Miles Pit Track.	Tow B'ts.	Value.	Barges...	Value.	Flats...	Value.	Locomotives...
Iron City Coal Co	230	2	2	$15,000	25	$22,500	13	$3,900	
Hodgens & Co	82	1½							
Wm. C. Guffy	100	¼					13	2,600	
Jno. Gilmore	187	1	3	52,000	40	34,000	10	3,000	
Jacob Tomar, Jr	25	2					3	900	
Robbins, Lynn & Co	380	1							
Harlem Coal Co	127	1							
Stoft & Cocain	80	¼					5	2,000	
Harlem Coal Co	15	1½							
Staib & Co	90	1							
Harlem Coal Co	400	1½							
Robison Bros	300	2					24	9,600	
Wm. H. Brown	325	5							
Whigham, Bailey & Co	275	4					5	7,000	
Hiram Warne	100	3	1	14,000			8	2,400	
Wm. H. Brown	1,000	8							
Lindsay, M'Cutcheon and Griers	148	3					22	8,000	
Henry Lloyd	650	2							
John Dippold	440	6	3	75,000	60	42,000	9	3,600	
J. P. Walters & Co	120	2½							
Jno. D. Negley	300	1½							
Miller, Greenhalgh & Co	225	4½							
Loutitt, Skillen & Co	15	1½	1	7,000			8	800	
Hodgson & Mort	230	1	1	10,000	1	400	3	1,200	

TABLE *No.* 1, *of Collieries in Pool No.* 4, *Monongahela River, showing:*

FIRM.	Opened...	Post Office.	Men.	Bushels Mined Yearly.
J. S. Cunningham & Co	1852	Brownsville	100	1,000,000
Jos. Garrow	1875	California	20	240,000
Morgan, Dickson & Co	1873	Pittsburgh	75	800,000
Crowthers & Musgrave	1870	California	35	400,000
Bigley, Forsythe & Co	1854	Pittsburgh	30	720,000
J. S. Neel	1853	......do	70	1,200,000
E. C. Furlong & Co	1871	Pike Run	50	600,000
J. Leadbetter & Co	1874	Pittsburgh	40	800,000
J. W. Reed & Co	1868	......do	40	400,000
J. V. Smith & Co	1867	Pike Run	40	1,040,000
Crow & Sons	1874	......do	35	600,000
Wood & Huston	1862	Greenfield	50	800,000
F. H. Coursin		M'Keesport	60	1,200,000
Morgan & Dickson	1870	Pittsburgh	60	700,000
Jno. Steeft	1870	......do	30	400,000
Wellington & Troy	1850	Fayette City	24	240,000
Wellington & Troy	1860	......do	30	240,000
Turnbull & Co.		......do	35	600,000
Jas. Rutherford	1865	......do	40	800,000
Frazier & Frye	1870	145 Water street	85	1,343,940
L. M. & W. F. Speer	1869	Bellevernon	50	700,000
Connecticut Coal Works	1865	Fayette City	5	
Clark & M'Alear	1864	Pittsburgh	50	400,000
J. W. Clarke	1864	......do	75	600,000
J. W. Clarke	1864	......do	75	600,000

TABLE *No.* 2, *of Collieries in Pool No.* 4, *showing:*

FIRM.	Wages.	Houses..	Value.	Pit cars..	Value.	Improvements..	Horses..	Mules...
J. S. Cunningham	$40,000	1	$500	50	$1,500	$14,400	....	6
Jos. Garrow	3,200	2	300	6	180	2,400	....	1
Morgan, Dickson & Co	40,000	....	....	30	900	4,000	....	4
Crowthers & Musgrave	16,000	1	1,200	20	600	10,000	....	2
Bigley, Forsythe & Co	11,200	2	1,000	14	420	3,000	....	2
J. S. Neel	24,000	2	1,000	50	1,500	6,000	2	2
E. C. Furlong & Co	24,000	2	800	30	900	20,000	1	2
J. Leadbetter & Co.	16,000	2	300	36	1,080	15,000	....	4
J. W. Reed & Co	16,000	2	1,300	46	1,380	6,000	....	5
J. V. Smith	3,200	3	600	47	1,410	6,000	....	4
Crow & Sons	13,600	1	600	35	1,050	8,000	....	4
Wood & Huston	13,600	8	4,000	57	1,710	6,000	1	4
F. H. Coursin	24,000	12	7,200	45	1,350	40,000	....	4
Morgan & Dickson	24,000	12	7,200	34	1,020	4,000	....	4
Jno. Steeft	12,000	3	2,100	20	600	8,000	1	2
Wellington & Troy	5,600	4	800	19	570	12,000	....	1
Wellington & Troy	6,000	22	4,400	14	420	3,000	1	1
Turnbull & Co	13,600	10	2,000	28	840	3,000	....	3
Jas. Rutherford	14,000	20	6,000	24	720	3,000	....	3
Frazier & Frye	32,000	15	7,500	65	1,950	15,000	....	8
L. M. & W. T. Speer	32,000	35	8,750	50	1,500	6,500	1	7
Connecticut Coal Co.	22,500	6	1,509	15	450	4,500	....	1
J. W. Clarke	32,000	30	24,000	100	3,000	15,000	....	9
J. W. Clarke	32,000	30	24,000	100	3,000	15,000	....	9
Clark & M'Alear	20,000	20	12,000	50	1,500	15,000	....	5

TABLE *No.* 3 *of Collieries in Pool No.* 4, *showing:*

FIRM.	Arces Coal.	Miles Pitt Track.	Tow Boats.	Value.	Barges.	Value.	Flats.	Value.
J. S. Cunningham & Co	500	1¾	....	....	1	$500	6	$2,400
Jos. Garrow	13	¼	....	....	....	....	2	300
Morgan, Dixon & Co	90	¾	1	$12,000	6	4,800	14	5,600
Crowthers & Musgrave	60	2	....	....	1	800	10	4,000
Bigley, Forsythe & Co	20	½	....	....	....	....	5	2,000
J. S. Neel	125	1¼	....	....	....	....	10	4,000
E. C. Furlong	90	1	....	....	1	300	5	1,000
J. Leadbetter & Co.	90	1	....	....	....	....	5	2,500
J. W. Reed & Co	20	2	1	4,500	....	....	36	9,000
J. V. Smith	......	1¼	....	....	....	....	....	....
Crow & Sons	440	¾	....	....	....	....	4	2,000
Wood & Huston	40	2	1	....	....	....	8	3,200
F. H. Coursin	140	1½	....	....	2	1,000	8	3,200
Morgan & Dickson	126	½	....	....	8	6,400	11	3,300
Jno. Steeft	90	1	1	15,000	6	6,000	....	....
Wellington & Troy	33	¼	....	....	....	....	5	2,000
Wellington & Troy	100	¼	....	....	....	....	5	2,000
Turnbull & Co	50	1	....	....	....	....	23	9,200
Jas. Rutherford	160	1	....	....	4	1,600	13	2,600
Frazier & Frye	100	3	1	15,000	....	....	24	9,600
L. M. & W. F. Speer	250	3	1	20,500	10	8,000	6	1,800
Connecticut Coal Co	211	¼	....	....	....	....	....	....
Clark & M'Alear	200	......	....	....	....	....	....	....
J. W. Clarke	200	2½	3	53,000	75	5,280	21	6,300
J. W. Clarke	200	2	....	....	....	....	....	....

In addition to these, there are a number of firms who not owning collieries, are dealers and shippers of coal and who obtain their coal from the various collieries by purchase. Owning tow boats and barges of their own, they run coal to all the various ports below from Cincinnati to New Orleans, and also St. Louis and points on the upper Mississippi.

SHIPPERS (ONLY) OF COAL.

FIRM.	Barges.	Value.	Tow Boats.	Value.	Flats.	Value.	Office.
Thos. Fawcett & Son	50	$40,000	3	$125,000	10	$4,000	87 Water street.
Mulvegill, Gumbert & Co.			1				
S. Roberts & Co	32	25,600	2	37,000			118 Water street.
R. & J. Wotson	25	20,000	2	60,000	3	900	158 First avenue.
S. Horner & Sons	75	60,000	5		6	2,100	64 Water street.
Riddle, Coleman & Co	52	30,000	4	90,000	12	3,600	3 Smithfield st.
Miller, Lynn & Co							
Couch & Robinson	17	13,600					136 Water street.
Thos. M'Gowan	8	6,400	1	20,000	2	700	145 Water street.
Cumberland Coal Co	14	42,400	1	25,000	2	700	Smithfield st.
Hornet Coal Co	25	20,000	1	20,000	3	900	74 Water street.
Dravo & M'Donald	10	34,000	1	20,000	1	300	74 Water street.
Jno. F. Dravo	20	16,000	1	8,000	3	1,500	74 Water street.
Petrie & White			1	4,000			89 Water street.
J. B. Sneathen & Co			2				118 Water street.
C. S. Adams & Co	3	18,000	1	8,000	5	2,000	132 Water street.
Jas. Neel & Co	3	2,100	1	10,000	3	900	M'Keesport.
Hays Coal Co	63	63,000	1	28,000	12	4,800	142 Water street.

In the foregoing presentation of the collieries on the four pools of the Monongahela slackwater, the amounts given as yearly mined are, while given nearly correct, not presented as the absolute turn out, although they are the approximate yearly average in each case. The following table shows, however, absolutely the amount passing the locks of the Monongahela navigation company, for thirty-one years, and represents the actual amount brought to the city, by that channel, for home consumption, and shipped down the Ohio during those years :

YEAR.	Pool No. 1. Bushels.	Pool No. 2. Bushels.	Pool No. 3. Bushels.	Pool No. 4. Bushels.	Total. Bushels.
1844					737,150
1845	2,527,879	1,328,604	314,342	434,360	4,605,185
1846					7,778,911
1847	3,377,703	4,188,258	1,227,201	851,965	9,645,127
1848	3,536,761	3,986,643	1,436,666	859,291	9,819,361
1849	2,944,044	4,420,347	1,434,723	909,393	9,708,507
1850	3,998,200	5,540,470	1,862,548	906,749	12,297,967
1851	4,105,624	5,846,168	1,769,302	800,134	12,521,228
1852	4,797,704	7,188,539	1,736,622	907,976	14,630,841
1853					15,716,367
1854	4,756,263	9,251,532	2,006,633	1,317,518	17,331,946
1855	6,829,282	11,485,072	2,633,555	1,286,100	22,234,009
1856	3,910,978	3,213,740	1,031,613	427,764	8,584,095
1857	7,859,775	17,255,226	2,731,959	1,126,636	28,973,596
1858	7,082,600	15,143,868	2,500,025	970,176	25,696,669
1859	7,591,500	15,732,845	3,469,137	1,493,189	28,286,671
1860*	10,550,380	20,861,200	4,878,704	1,603,346	37,967,732

YEAR.	Pool No. 1. Bushels.	Pool No. 2. Bushels.	Pool No. 3. Bushels.	Pool No. 4. Bushels.	Total. Bushels.
1861.	4,483,717	11,495,900	3,595,705	1,296,400	20,865,722
1862.	4,801,856	10,094,100	2,739,500	948,500	18,583,956
1863.	5,935,392	14,182,600	4,481,810	1,844,450	26,444,252
1864.	7,202,175	18,415,700	6,549,700	2,903,342	35,070,917
1865*.	8,013,693	19,132,400	8,915,600	3,402,200	39,522,797
1866*.	8,813,200	23,064,500	7,577,600	3,059,100	42,615,300
1867*.	6,139,200	16,075,200	5,555,200	2,274,900	30,072,700
1868*.	8,796,400	23,802,700	7,622,600	5,079,300	38,301,000
1869*.	8,868,900	29,129,800	8,988,400	5,525,500	52,512,600
1870*.	8,070,700	32,132,000	10,012,400	7,381,300	57,596,400
1871.	6,966,200	27,348,700	8,300,400	6,006,000	48,621,300
1872.	8,989,000	28,614,500	9,176,000	7,429,330	54,208,806
1873.	7,820,100	28,416,150	9,619,628	10,309,360	56,173,238
1874.	9,113,500	33,516,700	11,440,800	11,810,700	65,881,700
1875.	9,200,300	31,729,900	7,911,900	12,566,900	61,409,000
Total	170,216,539	389,347,313	115,330,903	62,743,846	737,931,101

* From Pool No. 5, there was in 1860, 54,100 bushels ; in 1865, 58,900 ; in 1866, 100,900 ; in 1867, 28,200 ; in 1868 9,800 ; 1869, 23,600 ; 1870, 20,000.

The total amount of tolls paid in these twenty-eight years for the passing of this amount of coal was $1,253,041 37. The bulk represents 7,380 acres of coal run out in the twenty-eight years. In the last five years the amount has averaged 576 acres a year.

There are also numbers of persons engaged in the towing of coal and other merchandise, with steam tow boats, whose boats and barges are here given as being, some directly and others indirectly, engaged in the coal trade of Pittsburgh, and their exhibit is most fittingly presented in connection with the coal trade.

Table of Coal Tow Boats and Barges as Classed Above.

FIRM OR OWNER.	Office.	Tow Boats.	Value.	Barges.	Value.	Flats.	Value.
Capt. R. Craig	132 Water st.	1	$8,000			1	$300
Riddle & Co	132 Water st.	1	10,000			1	300
Capt. J. G. Fairfield	134 Water st.	1	6,000			1	300
Capt. Longwell		1					
W. S. B. Hays		1	7,000			7	2,450
Capt. Jos. Nixon		1	10,000	15	$18,000	1	400
Jas. Smith & Co		2		3	2,400	11	3,850
L. Monell		1	5,000				
M. Winnett		1	5,000				
Thos. Chester		1					
Cavitt, Reese & Co		1	8,000				
Gray's Iron Line	94 Water st.	3	78,000	19	75,000		
Briggs & Keer	118 Water st.	1	10,000	11	8,800		
Jos. Keeling & Sons	118 Water st.	1	10,000	60	48,000		
Fowler & Whitfield		1					

A portion of this coal here calculated as passing from Pool No. 1, is from the collieries on the Youghiogheny river, the details of which are exhibited in a similar manner of those of the Monongahela river, in the tables showing the collieries on the line of the Pittsburgh and Connellsville railroad.

The collieries on the Pittsburgh, Cincinnati and St. Louis railway, are shown in the following table. The coal from these works is chiefly brought to Pittsburgh ; some part of it is, however, shipped directly from the mines. The collieries on this road extend along its line for a distance of 22 miles.

Table No. 1 *of Collieries on Pittsburgh, Cincinnati and St. Louis railway, showing :*

FIRM.	Estab'd.	Post Offices.	Men.	Bush. Mined Yearly.
D. Steen & Son	1860	Pittsburgh	161	2,000,000
Fort Pitt Coal Co	1865	do	200	1,000,000
F. C. Negley	1865	do	165	1,550,000
Mansfield Coal and Coke Co.	1865	do	265	2,500,000
Dickson, Stewart & Co	1866	do	103	1,000,000
Pittsburgh National Coal and Coke Co.	1866	do	130	1,500,000
Pittsburgh and Walnut Hill Co.	1866	Midway	125	1,000,000
Midway Coal and Coke Co.	1870	do	130	1,040,000
Hugh Richardson's heirs	1872	M'Donald	60	800,000
Oak Ridge Coal Co	1873	Oakdale	85	900,000
Wm. P. Rend & Co	1873	Pittsburgh	275	1,500,000
Robbins Block Coal Co	1874	Midway	150	1,500,000

TABLE *No.* 2 *of Collieries of Pittsburgh, Cincinnati & St. Louis Railway, showing:*

STYLE OF FIRM.	Wages Paid.	Houses..	Value.	Pit Cars.	Value.	Improvements..	Horses..	Mules...
F. C. Negley	$65,000	2	$1,000	175	$5,250	$73,000	18	20
Pitts. Nat. Coal and Coke Co.	67,000	26	10,400	200	6,000	26,000	2	16
Fort Pitt Coal Co	45,000	38	11,400	175	5,250	55 000	....	15
Mansfield Coal and Coke Co	100,000	20	8,000	200	6,000	40,000	1	13
Dickson, Stewart & Co	47,000	22	8,800	40	1,200	14,000	....	5
W. P. Rend & Co.	65,000	22	13,200	140	4,200	35,000	4	22
D. Steen & Son.	70,000	29	11,600	90	2,700	22,000	20	8
Huntsman, Miller & Co	24,000	19	5,700	100	3,000	2,000	....	7
Hugh Richardson's Heirs	24,000	4	1,600	45	1,350	4,500	....	4
Pittsburgh and Walnut Hill Co	50,000	9	5,600	100	3,000	30,000	3	9
Robbin's Block Coal Co	75,000	13	11,700	140	4,200	30,000	5	9
Midway Coal Co.	45,000	15	7,500	90	2,700	20,000	....	7
Oak Ridge Coal Co.	40,000	2	1,600	36	1,080	15,000	....	2

TABLE *No.* 3, *of Collieries on Pittsburgh, Cincinnati & St. Louis Railway, showing:*

STYLE OF FIRM.	Acres of Coal.	No. of R. R. Cars.	Value.	Miles Pit Track..	No. Coke Ovens..	Value.	Bush. of Coke...
F. C. Negley	653	111	$30,000	6	....	......	....
Huntsman, Miller & Co	350	45	15,000	6	....	......	....
Pittsburgh National Coal and Coke Co.	400	66	23,600	6	....	......	....
Fort Pitt Coal Co	380	67	18,200	5	16	$4,200	180,000
Mansfield Coal and Coke Co	800	78	32,800	6	22	5,500	400,000
Hugh Richardson's Heirs	30	.....	....	1	....	......	....
Dickson, Stewart & Co	440	26	7,800	2	....	......	....
W. P. Rend and Co	233	420	100,000	2½	5	750	65,000
Oak Ridge Coal Co	250	19	11,400	2	....	......	....
D. Steen & Son	136	90	36,000	4½	....	......	....
Pittsburgh and Walnut Hill Co	600	150	90,000	5	8	2,000	400,000
Robbins Block Coal Co	200	.....	....	3	....	......	....
Midway Coal Co	100	.....	....	4	....	......	....

Another division of the Pittsburgh coal and coke trade is along the Connellsville & Pittsburgh railroad and the Youghiogheny river. The principal portion of this is transported by the railroad. It is along this line of road that the famous Connellsville coke is so largely produced, from the coal of this section.

The following tables exhibit the cokeries along the road and its branches, and present the details of their working status.

TABLE *No.* 1 *of Cokeries on Pittsburgh and Connellsville Railroad, showing:*

FIRM.	Estab'd.	P. O.	Men.	Bushels of Coke a Year.
Tyrone Mines	1858	Pittsburgh	61	*2,000,000
Connellsville Gas Coal Co	1865	Con'llsville	85	2,190,000
Pittsburgh & Connellsville G. C. and C. Co	1865	Con'llsville	225	5,694,000
Frick & Co	1871	Broad Ford	175	4,745,000
J. M. Cochran	1870	......do......	40	1,460,000
Brown & Cochran	1854	......do......	400	10,950,000
Waverly Coal & Coke Co	1873	Pittsburgh	200	*1,500,000
Thos. Moore	1863	Moore's Sta	350	....
Lemont Furnace Co	1875	Pittsburgh	200	....
Youghiogheny Coal and Coke Co	1863	....	250	3,678,000
N. J. Bigley	1846	Pittsburgh	175	894,250

* Product used entirely by the Eliza Furnace.

TABLE *No. 2, of Cokeries on Pittsburgh & Connellsville Railroad, showing:*

FIRM.	Wages.	Houses..	Value.	Pit Cars..	Value.	Improvements..	Horses..	Mules...
Tyrone Mines....................	$30,000	30	$12,000	40	$1,200	....	....	....
Connellsville Gas Coal Co........	38,250	40	17,000	60	1,800	$50,000	6	4
Pitts. and Conn. G. C. and C. Co.	101,250	80	24,000	75	2,250	136,590	12	4
Frick & Co........................	78,750	53	45,000	70	2,100	80,000	1	13
J. M. Cochran & Co..............	18,000	9	4,500	28	840	35,000	....	5
Brown & Cochran................	180,000	146	72,000	180	5,400	200,000	34	11
Waverly Coal Co	90,000	74	18,000	140	4,200	72,500	3	15
Lemont Furnace Co*..............	....	40	12,000	24	720	....	12	15
Youghiogheny C. and C. Co.....	112,800	45	36,000	107	3,210	61,000	4	13
N. J. Bigley.....................	80,000	40	18,000	100	3,000	....	4	12
Thos. Moore.....................	157,500	45	45,000	120	3,600	110,000	6	8

* See Uniontown Branch.

TABLE *No. 3, of Cokeries on the Pittsburgh & Connellsville Railroad, showing:*

FIRM.	Acres of Coal.	No. of R.R. Cars.	Value.	Miles Pit Track..	Coke Ovens....	Value.
Tyrone Mines..............................	......	30	$15,000	....	120	$30,000
Connellsville Gas Coal Co	3,100	24	14,400	3	100	25,000
Pitts. & Conn. Gas Coal and Coke Co....	350	147	88,200	3	253	63,250
Frick & Co................................	280	15	9,000	3	200	54,250
J. M. Cochran..	140	......	....	1½	63	15,750
Brown & Cochran..	650	180	108,000	13	441	110,250
Waverly Coal and Coke Co..................	1,000	74	40,400	3	20	6,000
Thos. Moore................................	537	41	24,600	3	30	7,500
Lemont Furnace Co.........................	300	6	1,200	2	105	26,000
Youghiogheny Coal and Coke Co............	1,000	113	67,800	3	20	5,000
N. J. Bigley................................	195	56	33,600	3	35	8,750

TABLE *No. 1, of Cokeries on Uniontown Branch, P. & C. R. R., showing:*

FIRM.	Estab'd..	P. O. Address.	Men....	Bushels of Coke.
Hogsett, Watt & Co......................	1871	Mt. Braddock	80	2,340,000
Hogsett & Beal..........................	1871	Mt. Braddock	50	1,820,000
Lemont Furnace Co.......................	1875	Lemont station........	....	1,664,000
T. H. Frost & Son......	1865	Frost station..........	50	*93,600
T. W. Watt & Co.........................	1868	Dunbar...............	72	1,533,000
Paul, Brown & Co........................	1871	Dunbar...............	100	2,190,000
R. Henderson & Co......................	1872	Dunbar...............	70	1,752,000

* Supplies Railroad with 1,095,000 bushels of coal in addition.

TABLE *No.* 2 *of Cokeries on Uniontown Branch of P. and C. railroad, showing:*

FIRM.	Wages.	Houses..	Value.	Pit Cars.	Value.	Improvements.	Horses..	Mules...
Hogsett, Watt & Co.	$36,000	35	$15,000	50	$1,500	$75,000	2	5
Hogsett & Beal..	22,500	20	12,000	30	900	25,000	2	2
Lemont Furnace Co.	21,000	....	....	24	720	48,000*	....	....
T. H. Frost & Co.	22,500	6	1,800	16	480	5,000	1	1
T. W. Watt & Co.	32,400	15	6,250	25	750	30,000	....	6
Paul Brown & Co.	45,000	8	5,000	35	1,050	30,000	1	4
R. Henderson & Co	31,500	8	3,200	25	750	30,000	6	4

* See previous table.

TABLE *No.* 3 *of Cokeries on Uniontown Branch of P. & C. railroad, showing:*

FIRM.	Acres Coal.	No. Rail Cars.	Value.	Miles Pit Track.	Coke Ovens.	Value.
Hogsett, Watt & Co.	400	....	......	5	130	$32,500
Hogsett & Beal.	100	....	......	2	70	17,500
Lemont Furnace Co	300	6	$3,600	2	105	26,250
T. W. Watt & Co	90	....	......	2	60	15,000
Paul, Brown & Co	100	....	......	2	100	25,000
P. Henderson & Co	100	6	3,600	1½	70	17,500
T. H. Frost & Co.	75	....	......	1	5	1,250

TABLE *No.* 1 *of Cokeries on Mt. Pleasant Branch of P. and C. railroad, showing:*

FIRM.	Estab'd.	Post Office.	Men....	Bush. Coke Yearly.
Wm. Duncan & Bro	1872	Mt. Pleasant....	15	468,000
Wm. L. Mullen	1872	....do	27	842,400
Boyle & Hazlett.	1872	....do	35	1,950,000
Boyle & Hazlett	1872	....do	32	1,560,000
John T. Stauffer	1873	Stauffer station.	8	312,000
Cochran & Ewring	1874	....do	21	936,000
J. T. Overholt	1874	Mt. Pleasant....	15	624,000
Markle & Co.	1874	West Overton..	50	1,456,000
J. Stauft & Co	1874	....do	10	312,000
Israel Painter.	1874	....do	24	1,144,000
A. S. R. Overholt & Co	1874	....do	26	1,248,000
J. P. Stauffer & Co	1875	....do	20	702,000
Imhsen, Lake & Co.	1875	Scottdale	16	800,000
W. A. Keifer	1872	Fountain Mills.	5	208,000
Morgan & Co	1858	Broadford	70	2,184,000
Strickler & Lane.	1873	....do	22	936 000
Markle, Sherrick & Co.	1871	Sherritt Station.	75	2,184,000
Hurst, Moore & Co	1871	Bradford	60	2,372,500
C. H. Armstrong & Son	1875	....do	60	1,560,000
A. A. Hutchinson & Bro.	1873	....do	60	1,560,000
Cochran & Strickler.	1864	....do	17	611,750
Laughlin & Co.	.....	....	....	....

TABLE *No.* 2 *of Cokeries on Mt. Pleasant Branch of P. and C. railroad, showing:*

FIRM.	Wages . .	Houses. .	Value . . .	Pit Cars.	Value . . .	Improvements.	Horses . .	Mules . . .
Wm. Duncan	$6,750	5	$2,500	12	$360	$9,500	3	....
Wm. L. Mullen	12,150	8	4,000	18	540	19,000	2	3
Boyle & Hazlett	15,750	14	3,500	31	930	30,000	3	4
Boyle & Hazlett	14,850	8	2,400	28	840	24,000	3	6
John T. Stauffer	3,600	5	1,000	6	180	6,000	2	....
Cochran & Ewing	9,450	5	3,000	14	420	20,000	....	5
J. T. Overholt	6,750	4	1,600	11	330	15,000	3	2
Markle & Co.	22,250	8	2,000	24	720	30,000	4	5
J. Stauft & Co	4,500	3	600	9	270	4,500	3	....
Israel Painter	10,800	6	2,300	19	510	24,000	6	4
A. S. R. Overholt & Co	11,700	5	9,000	23	690	29,000	5	4
J. P. Stauffer & Co	9,000	4	1,800	16	480	14,000	4	2
Imhsen, Lake & Co	7,200	4	1,400	16	480	15,000	1	3
W. A. Kiefer	2,250	2	500	3	90	5,000	1	1
Morgan & Co.	31,500	25	20,000	40	1,200	60,000	1	7
Strickler & Lane	9,900	5	6,000	14	420	20,000	....	3
Markle, Sherrick & Co	33,750	20	10,000	35	1,050	45,000	1	5
Hurst, Moore & Co	27,000	20	10,000	28	840	45,000	1	4
C. H. Armstrong & Son	27,000	40	30,000	40	1,200	46,000	1	6
A. A. Hutchinson & Bro	27,000	15	9,000	30	900	40,000	1	4
Cochran & Strickler	6,650	5	2,500	14	420	15,000	....	3

TABLE *No.* 3 *of Cokeries on Mt. Pleasant Branch of P. and C. railroad, showing:*

FIRM.	Coal Acres.	No. Rail Cars.	Value.	Miles Pit Track.	Coke Ovens.	Value.
Wm. Duncan & Bro	140	......	....	1	28	$7,000
Wm. L. Mullen	100	......	....	1⅓	80	20,000
Boyle & Hazlett	80	......	....	2½	100	25,000
Boyle & Hazlett	120	......	....	1½	80	20,000
John T. Stauffer	80	......	....	¾	20	5,000
Cochran & Ewing	110	......	....	1¼	63	15,750
J. T. Overholt	40	......	....	1	120	30,000
Markle & Co	130	......	....	2	70	17,500
J. Stauft & Co	90	......	....	1¼	18	4,500
Israel Painter	120	......	....	1	70	17,500
A. S. R. Overholt & Co	180	......	....	1½	62	15,500
J P. Stauffer & Co	80	......	....	1	40	10,000
Imhsen, Lake & Co	110	......	....	1¼	50	12,500
W. A. Kiefer & Co	30	......	....	1	12	3,000
Morgan & Co	600	160	$96,000	3	111	27,700
Strickler & Lane	55	......	....	1½	44	11,000
Markle, Sherrick & Co	125	45	27,000	2½	80	20,000
Hurst, Moore & Co	100	......	....	1	101	25,250
C. H. Armstrong & Son	80	30	18,000	2	63	15,750
A. A. Autchinson & Bro	140	25	15,000	3	80	20,000
Cochran & Strickler	48	......	....	1½	35	8,750
Laughlin & Co	......	......	....	......	......	....

TABLE *No.* 1 *of Cokeries on South-West R. R. Branch, P. and C. R. R., showing:*

FIRM.	Estab'd.	Post Office.	Men....	Bush. Coke Yearly.
Dillinger, Sherrick & Co........................	1873	Pittsburgh..	50	1,632,000
Dillinger, Suttle & Co........................	1873	Pittsburgh..	30	828,000

TABLE *No.* 2 *of Cokeries on South-West R. R. Branch, P. and C. R. R., showing:*

FIRM.	Wages.	Houses..	Value.	No. Pit Cars.	Value...	Other improvem'ts.	Horses..	Mules...
Dillinger, Sherrick & Co......	$24,500	16	$5,000	18	$540	$7,000	4	4
Dillinger, Suttle & Co.........	13,500	....	....	12	360	5,000	....	3

TABLE *No.* 3, *of Cokeries on South-West R. R. Branch, P. & C. R. R., showing:*

FIRM.	Acres of Coal.	Miles Pit Track..	Coke Ovens....	Value.
Dillinger, Sherrick & Co..	140	2	70	$17,500
Dillinger, Suttle & Co..	90	2	41	10,250

TABLE *No.* 1, *of Collieries on Youghiogheny River, showing:*

FIRM.	Estab'd..	Post Office.	Men.....	Bush. of Coal Yearly.
James O'Neal..................................	1865	M'Keesport.	100	1,000,000
John Penny..................................	1848	M'Keesport.......	140	* 700,000

* Also 50,000 bushels of coke—eight coke ovens.

TABLE *No.* 2, *of Collieries on Youghiogheny River, showing:*

FIRM.	Wages.	Houses..	Value.	Pit Cars.	Value.	Improvements.	Acres...
James O'Neal.....................	$56,000	14	$11,200	130	$3,900	$166,000	225
John Penny.....................	56,000	29	6,000	110	3,300	25,000	50

TABLE *No.* 3, *of Collieries on Youghiogheny River, showing:*

FIRM.	Barges..	Value.	Flats....	Value.	Miles Pit Track..	Horses...	Mules...	Tow B'ts.	Value.
James O'Neal......................	4	$3,200	10	$4,000	2	2	10	....	....
John Penny......................	25	20,000	4	1,200	3	6	12	1	$20,000

TABLE *No.* 1 *of Collieries on Pittsburgh and Connellsville Railroad showing:*

FIRM.	Estab'd.	Post Office.	Men.	Bush. Coal Yearly.
Youghiogheny Nat. Coal Co.	1863	West Newton	50	1,560,000
Waverly Coal Co	1863	Pittsburgh	*	700,000
Heath & White	1872	West Newton	100	1,300,000
Penn Gas Coal Co	1857	Irwin Sta'n, P. R. R.		4,000,000
Thos. Moore	1863	Pittsburgh	*	4,000,000
C. H. Armstrong & Sons	1862	....do	275	2,400,000
Wm. H. Brown	1863	....do	250	4,500,000
Youghiogheny C. & Coke Co	1863	....do	*	2,400,000
N. J. Bigley		....do		

*In cokeries.

TABLE *No.* 2 *of Collieries on Pittsburgh and Connellsville Railroad, showing:*

FIRM.	Wages.	Horses..	Value.	Pitt Cars.	Value.	Improvements..	Acres Coal.	Horses..	Mules...	Pit Track..
Youghiogheny Nat. Coal Co.	$22,500	9	$2,700	25	$750	$75,000	460		3	¾
Waverly Coal Co.	*									
Heath & White	45,000			50	1,500	30,000	300		6	½
Thos. Moore	*									
C. H. Armstrong & Sons	123,000	65	52,000	110	3,300	75,000	130	4	8	10
W. H. Brown	111,500	40	16,000	200	6,000	50,000	299	4	11	
Youghiogheny C. & Coke Co	*									
N. J. Bigley	*									
Penn Gas Coal Co.		22	22,000	85	2,550	60,000†	2,500	2	15	4

*In cokeries. †Have in addition 14 miles of T track, $50,000; one locomotive and passenger car, $15,000; 225 railroad freight cars, $135,000.

From these tables it would appear that there are in this division of the Pittsburgh coal trade, forty-eight cokeries. This coke is principally shipped to western points, although some is transported to the east, and a portion consumed at home.

The following tables give the collieries on the line of the Pennsylvania Railroad, as far out as Irwin's station, which works may properly be classed in the coal trade of Pittsburgh:

TABLE *No.* 1 *of Collieries on the Pennsylvania Railroad, showing:*

FIRM.	Estab'd.	Post Office.	Men.	Bushels Mined in a Year.
Braddocksfield G. C. Co			80	1,000,000
Penn Gas Coal Co.*	1857	Irwin Station	1,100	13,000,000
Shafton Gas Coal Co.	1854	......do	100	1,300,000
Westmoreland Gas Coal Co.**	1854	......do	629	13,000,000
Carnegie & Co.‡	1871	Larimer Station	60	
New York & Cleveland G. C. Co.†	1872	89 Wood street	700	13,000,000

*7 mines and 8 engines.
†7 mines, 2 locomotives.
**8 mines, 3 engines, 1 locomotive.
‡Cokery, making coke from slack by patent process.

TABLE *No.* 2 *of Collieries on the Pennsylvania Railroad, showing:*

FIRM.	Wages Paid	Horses..	Value.	Pit Cars....	Value.	Improvements...	Horses..	Mules...
Braddocksfield Gas Coal Co...	$36,000	10	$3,000	60	$1,800	....	1	15
Penn Gas Coal Co............	500,000	200	100,000	600	18,000	$200,000	15	80
Shafton Gas Coal Co..........	50,000	50	20,800	80	2,400	20,000	1	6
Westmoreland Gas Coal Co...	500,000	200	100,000	700	21,000	200,000	10	90
Carnegie & Co...............	25,000	5	2,500	40	1,200	95,000	....	5
N. Y. & Cleveland Gas Coal Co.	400,000	20	10,000	425	12,750	300,000	....	65

TABLE *No.* 3, *of Collieries on Pennsylvania Railroad.*

FIRM.	Acres of Coal.	No. of R. R. Cars.	Value.	Miles Pit Track..	R. R. side track...	Value.
Braddocksfield Gas Coal Co..................	5	81	$32,500	6	....	....
Penn Gas Coal Co...........................	4,500	1,000	600,000	35	10	$100,000
Shafton Gas Coal Co........................	400	125	75,000	3	$\frac{3}{4}$	15,000
Westmoreland Gas Coal Co..................	9,000	1,200	720,000	45	12$\frac{1}{2}$	100,000
Carnegie & Co*............................	17	......	....	$\frac{1}{8}$	$\frac{1}{8}$	400
New York & Cleveland Gas Coal Co.........	1,700	315	167 400	65	4	40,000

*120 Coke ovens of a value of $30,000, producing 1,500,000 bushels coke.

A fifth division of the collieries of the Pittsburgh coal trade lies along the Allegheny Valley railroad, and is as follows:

TABLE *No.* 1, *of Collieries on the Allegheny River, showing:*

FIRM.	Estab'd..	Who By.	Post Office.	Men....	Bushels Mined in a year.
Armstrong, Dickson & Co.	1863	Armstrong & Co........	Pittsburgh..	150	1,800,000
P. Y. Hite..................	1858	H. P. Hite..............	Tarentum..	75	1,000,000
Etna & Vesuvius*........	....	Spang & Co............	Pittsburgh..	70	1,350,000
Mahoning Coal Co........	1873	Mahoning Coal Co......	376 Penn st..	75	1,003,280
Loyal Hanna C. and C. Co.	1873	Loyal Hanna C.'& C. Co..	376 Penn st..	180	3,900,000

* Worked jointly by those two rolling mills for their own supply.

TABLE *No* 2, *of Collieries on the Allegheny River, showing:*

FIRM.	Wages.	Houses..	Value.	Pit Cars..	Value.	Improvements..	Horses..	Mules...
Armstrong, Dickson & Co........	$50,000	25	$7,500	175	$5,250	$60,000	....	20
P. Y. Hite........................	40,000	35	17,500	45	1,350	20,000	....	9
Etna & Vesuvius................	45,000	12	6,000	70	2,100	....	16	6
Mahoning Coal Co................	35,000	30	15,000	50	1,500	30,000	15	....
Loyal Hanna Coal and Coke Co..	80,000	25	20,000	100	3,000	25,000	....	....

TABLE *No.* 3, *of Collieries on the Allegheny River, showing:*

FIRM.	Acres of Coal.	No. of R. R. Cars.	Value.	Miles Pit Track..	Locomotives...
Armstrong, Dickson & Co.	300	67	$134,000	7	3
P. Y. Hite	550	78	25,000	2	....
Etna & Vesuvius	325	36	12,600	3	....
Mahoning Coal Co	600	....	....	2	....
Loyal Hanna Coal and Coke Co *	1,200	....	....	2	....

* 100 Coke ovens of a value of $25,000, producing 1,800,000 bushels coke a year.

In addition to these distinct divisions of the coal trade, the works of which are beyond the city, there are a number of others whose collieries are within the limits of the corporate city. Those are shown in the subjoined table.

TABLE *No.* 1 *of Collieries and Cokeries in and around the city of Pittsburgh, showing:*

FIRM.	Estab'd.	By	Location.	Men....	Bushels mined yearly.
Keeling & Co	1861	Keeling & Co.	25th & Josephine	490	5,000,000
Gray & Bell	1853	A. Carnahan	35th ward	80	1,250,000
Gray & Bell	1857	A. K. Lewis	35th ward	100	1,250,000
Gray & Bell	1866	Wm. Chess	35th ward	145	1,000,000
Hartley & Marshall	1851	Little Saw Mill R. R. Co.	36th ward	100	1,000,000
Wettengle & Gormly	1870	Wettengle & Gormly,	34th ward	75	1,000,000
Jas. Lindsay & Co	1873	Jas. Lindsay & Co.	6 Wood st.	15	400,000
Jones & Laughlin *	......	....	....	....	....
C. H. Armstrong, Jr	1856	John M'Claren	....	35	........†
C. H. Armstrong & Son	1864	C. H. Armstrong	....	14	........†
Castle Shannon R. R.	1871	Castle Shanon R. R.	89 Wood st.	400	4,000,000
John Stacy & Co	1852	Wm. York	36th ward	12	260,000‡
Peter Moul	1856	G. & L. Moul	Allegheny	15	500,000‡

*Mine for use of American Rolling Mills only. Amount included in consumption of coal by Rolling Mills. †See Table No. 3. ‡Coke.

TABLE *No.* 2 *of Collieries and Cokeries in and around Pittsburgh, showing:*

FIRM.	Wages.	Houses..	Value.	Pit Cars.	Value.	Improvements.	Horses..	Mules...
Keeling & Co	$140,000	40	$20,000	500	$15,000	$30,000	50	50
Gray & Bell	60,000	....	....	75	2,250	20,000	....	8
Gray & Bell	60,000	6	3,600	80	2,400	130,000	....	7
Gray & Bell	51,000	30	11,250	230	6,900	100,000	11	10
Hartley & Marshall	25,000	35	14,000	100	3,000	4,000	....	5
Wettengle & Gormly	24,000	....	....	35	1,050	7,000	48	12
James Lindsay & Co.	9,000	2	1,000	10	300	2,000	3	1
C. H. Armstrong, Jr.	20,000	15	6,000	.....	....	9,000	3	26
C. H. Armstrong & Son	10,000	....	....	.....	....	7,000	3	3
Castle Shannon R. R.	200,000	....	....	500	20,000	226,934*	10	56
Jno. Stacy & Co.	2,100	1	200	2	60	....	7	....
Peter Moul	7,500	....	....	.....	....	....	22	....

* Includes 8 miles railroad, 2 incline planes and 2 tunnels.

TABLE *No.* 3 *of Collieries and Cokeries in and around Pittsburgh, showivg:*

FIRM.	Acres of Coal.	No. R. R. Cars.	Value.	Miles Pit Track.	Locomotive.	Coke ovens.	Bushels Coke.
Keeling & Co	430			10	3*	8	80,000
Gray & Bell	400			3	2		
Gray & Bell	40	60	$12,000	3			
Gray & Bell	200			3		12	300,000
Hartley & Marshall	150			4			
Wettengle & Gormly	150			9			
James Lindsay & Co	50			3			
		ovens					
C. H. Armstrong, Jr		52	13,000				1,000,000
C. H. Armstrong & Son		28	7,000				600,000
Castle Shannon R. R	920			12	6		
Jno. Stacy & Co.		16	4,000				
Peter Moul		28	6,000				

*1 towboat, $15,000; 48 barges, $40,000; 1 flat.

From these tables it would appear that the coal trade is naturally divided into six distinct divisions. While its centre is Pittsburgh, it extends along the Monongahela sixty miles, up the Youghiogheny about the same distance, along the Pittsburgh, Cincinnati and St. Louis railroad twenty-two miles, out the Pennsylvania railroad twenty miles, and up the Allegheny Valley railroad about the same distance. In this reach in five different directions in the mining of coal, the force of that centrality of position previously mentioned is apparent. The entire reach is about one hundred and eighty miles, while the average distance is but only thirty-six miles, and in three divisions only twenty miles; and in all cases, in such lines of transportation that in all but the Monongahela river, the works can be reached from the Pittsburgh offices of the companies in about one hour's time, or less; and in that likewise on half of the pools of the Monongahela. The totals of coal trade show thus in their respective divisions, only one of which, using the rivers for transportation, has tow boats and barges.

ON THE PENNSYLVANIA RAILROAD.

Total collieries	6	Total wages	$1,511,000
" hands	2,669	" value coal*	2,460,000
" bushels mined	41,000,000	" " wagons	51,105
" pit wagons	1,905	" " houses	236,300
" houses	485	" " horses and mules	14,400
" horses and mules	288	" " R. R. cars	1,594,000
" R. R. cars, 4 and 8 wheels	2,721	" " other impt's	815,000
" value, except land,	$2,697,765	" " pit track	....
" miles of pit track	154		
" acres	15,622		

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* At 6 cents per bushel.

ON THE ALLEGHENY VALLEY RAILROAD.

Total collieries	3	Total acres	3,275
" hands	550	" wages	$250,000
" bush. mined	9,053,280	" value coal*	543,196
" pit wagons	440	" " pit wagons	13,200
" houses	127	" " houses	66,000
" horses and mules	66	" " horses and mules	3,300
" railroad cars, 4 and 8 wheel	181	" " R. R. cars	171,600
" miles of pit track	16	" " pit track	....
" value prop., except land	$388,500	" " improvem'ts	13,500

ON PITTSBURGH AND CONNELLSVILLE (B. & O. R. R.) R. R. AND BRANCHES.

Total collieries and cokeries	52	Total acres	3,689
" hands	4,171	" wages	$1,824,752
" bushels coal mined	22,560,000	" value coal†	1,253,600
" pit wagons	2,399	" " pit wagons	69,570
" houses	1,108	" " houses	597,550
" horses and mules	326	" " horses and mules	53,900
" railroad cars, 4 and 8 wheel	928	" " R. R. cars	700,400
" coke ovens	3,245	" " coke ovens	826,200
" bushels coke	70,930,850	" " coke‡	3,516,542
" miles pit track	110	" " pit track	....
" value prop., except land	$4,158,010	" " improvem'ts	1,947,590

ON PITTSBURGH, CINCINNATI AND ST. LOUIS RAILROAD.

Total collieries	12	Total acres	4,572
" coke ovens	51	" value ovens	$10,650
" hands	1,849	" wages	717,000
" bushels mined	16,290,000	" value coal§	1,303,200
" pit wagons	1,541	" " pit wagons	46,230
" houses	219	" " houses	98,100
" railroad cars, 4 and 8 wheel	1,072	" " R. R. cars	364,800
" horses and mules	190	" " horses and mules	9,500
" miles of pit track	53	" " pit track	....
" value, except land	$885,130	" " improvem'ts	366,500

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*At 6 cents per bushel.

†At 6 cents per bushel.

‡At 5 cents per bushel.

§At 6 cents per bushel.

IN THE CITY OF PITTSBURGH.

Total collieries	11	Total acres	2,340
“ hands	1,031	“ wages	$588,600
“ bushels mined	15,660,000	“ value coal*	1,096,200
“ pit wagons	1,552	“ “ pit wagons	50,900
“ houses	113	“ “ houses	50,050
“ railroad cars, 4 to 8 wheel	60	“ “ R. R. cars	12,000
“ horses and mules	300	“ “ horses and mules	15,000
“ miles pit track	47	“ “ improvem’ts	517,934
“ value prop., except land	$648,884		

ON THE MONONGAHELA RIVER.

Total collieries	74	Total acres	17,247
“ hands	6,359	“ wages	$2,843,200
“ bushels mined	69,663,946	“ value coal†	4,876,475
“ pit wagons	6,539	“ “ pit wagons	196,176
“ houses	1,846	“ “ houses	784,350
“ horses and mules	558	“ “ horses and mules	27,900
“ miles pit track	196	“ “ pit track	....
“ tow-boats	54	“ “ tow-boats	884,500
“ barges	1,006	“ “ barges	785,180
“ flats	564	“ “ flats	176,700
“ value prop., except land	$4,698,006	“ “ improvem’ts	11,843,200

ON ALL DIVISIONS.

Total collieries	158	Total acres	46,745‡
“ hands	16,629	“ wages	$7,704,550
“ bushels mined	176,227,220	“ value coal	11,302,071
“ pit wagons	14,296	“ “ pit wagons	426,021
“ houses	3,898	“ “ houses	1,832,350
“ horses and mules	1,764	“ “ horses and mules	124,000
“ railroad cars	4,992	“ “ R. R. cars	2,843,700
“ tow-boats	54	“ “ tow-boats	884,500
“ barges	1,006	“ “ barges	785,400
“ flats	564	“ “ flats	176,700
“ miles pit track	576	“ “ track	....
“ value prop., except land	$13,498,495	“ “ improvem’ts	5,503,733

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*At 7 cents per bushel.

†At 7 cents per bushel.

‡The acres of coal remaining belong to collieries out of which coal has not been taken.

THE IRON WORKS OF PITTSBURGH.

Although the consumption of iron enters into all the business of Pittsburgh, yet by her iron manufactures are generally understood the products of her rolling mills, her foundries and her machine shops.

While the knowledge and use of iron is very ancient, the sale of its manufacture was, up to the days of Homer, of so small an extent that at the games in honor of Patrocles, the most precious prize was a piece of iron which a single man could throw. And it is recorded that when Porus came from the East, from the land of gold and of pearls, to propitiate Alexander the Great, his most valuable gift was a piece of Indian iron weighing forty pounds.

It is thought the crusaders brought back with them a knowledge of manufacturing cast iron, but although that knowledge was early put to use in Europe, yet the progress was so slow that in 1740, only 136 years ago, the whole production of England was made from fifty-nine furnaces, averaging 249 tons each, or a value of 17,350 tons. In 1856 it was calculated by Abram S. Hewitt, that the consumption of iron was

Nations.	Production per head.	Consumption per head.
England	287 lbs.	140 lbs.
United States	84 "	117 "
France	40 "	60 "
Sweden and Norway	92 "	30 "
Belgium	136 "	70 "
Austria	12½ "	15 "
Russia	10 "	10 "
Switzerland	00 "	22 "
Prussia	50 "	50 "
Germany, Zollverein	50 "	50 "
Spain	4½ "	5 "

The same authority computes that from the ratio of increase in 115 years, during which time it increased seventeen fold, the next century would show a demand requiring an annual make of 140,000,000 tons. The consumption of iron is so rapidly increasing, that it requires shorter periods for the doubling of the production from a given date. In Great Britain, commencing at 1806, it required until 1824, or 18 years, to double the amount consumed at the former date. In 1836 it had again doubled, being only twelve years. In 1847, eleven years, it had doubled again; and in 1855, a period of eight years, it had reached 3,500,000 tons, being an increase of 1,500,000 tons in that time, at which rate it would double in ten years.

The following table, taken from a lecture by Abram. S. Hewitt, gives the production of various countries, at the dates specified :

		Tons.			Tons.
England	1855	3,585,906	Prussia		400,000
France	1845	650,000	Germany		200,000
Belgium	1855	225,000	Elba and Italy		72,000
Russia	1851	300,000	Spain		27,000
Sweden	1852	157,000	Denmark & balance of Europe,		20,000
Norway	1855	22,500	United States	1856	1,000,000
Austria	1847	165,765			

In commenting upon the enormous production, stated by Mr. Hewitt, as required during the next century, the following language is used in "Pittsburgh As It Is," by Geo. H. Thurston, published in 1857 :

"The question at once arises, where is the immense quantity to be made? To solve this question, there is a certain condition of things to be considered. First, is required an adequate supply of the raw materials ; then a location of those materials that will enable them to be cheaply brought together ; for as previously stated in other chapters of this volume, the value of raw material does not lay so much in what it is, but where it is. There must be cheap and extensive means for transportation to market, also a sufficiently populous country to render labor attainable at a reasonable cost ; and likewise skill to manage such works as may be erected in an economical manner.

"All these requisites exist in the western and eastern iron counties of which Pittsburgh is the focus ; and it is obvious that in the solving of the question, of from whence will come the immense increase required by the calculation of Mr. Hewitt, that the section of country mentioned must aid largely in supplying any such demand ; and that Pittsburgh will consequently increase wonderfully in furnishing her quota of the demand."

The following is, as nearly as can be ascertained, the world's total production of iron in 1871 :

Great Britain	6,500,000 tons.
United States	1,912,000 "
France	1,350,000 "
German Zollverein	1,250,000 "
Belgium	896,000 "
Austria	450,000 "
Norway and Sweden	280,000 "
Russia	330,000 "
Italy	75,000 "
Spain	72,000 "
Other countries	200,000 "
Total	13,315,000 tons.

In 1873 the production of iron in the United States had risen to 2,700,000 tons. In 1876 there were in the United States 713 furnaces, with annual capacity of 5,439,230 tons. There were 332 *iron* rolling mills whose capacity was 4,189,760 tons, having 4,475 puddling furnaces. In 1876 Pittsburgh has 11 furnaces, having a capacity of 236,992 tons, or nearly one-twentieth of the entire product of the country in 1873, and one fifty-sixth of the entire production of iron in the world in 1871. The following table presents the furnaces and details of size and capacity:

FURNACE.	Owners.	Stacks...	Ft. High.	Ft. Bosh.	Built...	Capacity.
Clinton..........	Graff, Bennett & Co....................	1	45	12	1859	12,000
Eliza.............	Laughlins & Co..........................	2	60	17	1861	36,000
Superior.........	Harbaugh, Mathias & Owens............	2	45	12	1863	22,000
Shoenberger....	Shoenberger, Blair & Co................	2	62	13	1865	28,000
Isabella..........	Isabella Furnace Co....................	1	75	18	1872	75,712
Do..............	....do........do..........................	1	75	20	1872	
Lucy..............	Lucy Furnace Co.................... Carnagie Brothers, owners..........	1	75	20	1872	41,280
Soho.............	Moorhead, M'Cleane & Co............	1	65	19	1872	22,000

These furnaces, in full operation, will employ in the various labors required at the furnaces, 1,000 hands, whose wages will average annually about $550,000. They will use, running at full capacity, 11,894,600 bushels of coke. The quantity of ore used depending, of course, on its per cent. of yield, must vary, and admits of no fixed statistics being given.

In 1876 there is in Pittsburgh thirty-three *iron* rolling mills, *not to include eight steel rolling mills*, with seven hundred and sixty-four puddling furnaces, and an annual capacity of four hundred and fifty thousand net tons, equal to one-ninth of the whole capacity of all the mills in the United States, more than one-sixth of all the puddling furnaces, and one-tenth of all the iron rolling mills in the country. From these statistics it would appear that the prediction of 1857, just quoted from "Pittsburg As It Is," has been largely fulfilled. Is it venturing much to repeat the prediction? The same elements upon which it was based in 1857, still exist—and may not the following sentence from the same publication be quoted as applicable to the future as well as the past:

"It has been stated that the future millionaires of America will be found among the iron and coal mines of Pennsylvania. That they will be found among the rolling mills, the foundries, the machine shops and the coal companies of Pittsburgh, there can be no doubt. That her ores and her coal strata are of sufficient extent to enable her to produce 50,000,000 tons with the same drain on her natural resources as Great Britain can produce three and a-half million, is conclusive."

The position which Pennsylvania would attain in such a state of trade is apparent from her 15,000 square miles of coal and the deposits of the various iron ores which accompany it in every direction; and the rank of Pittsburgh is easily deducible from the remarks and the data given. Great Britain had but 11,000 square miles of coal, as the basis of her manufacturing success and wealth.

The present sources from which Pittsburgh draws her supply of pig iron are nine: 1st. The products of her eleven home furnaces, whose capacity is, as before stated, now equal to one-twentieth of the whole of the United States. 2d. The Allegheny river region. 3d. The anthracite region. 4th. From the celebrated Juniata section of ores. 5th. From eastern Ohio. 6th. From Missouri and Lake Superior. 7th. From the Hanging Rock region of Ohio. 8th. From Kentucky and Tennessee. 9th. From the Youghiogheny region.

Research *may* discover localities where greater natural facilities for the production of iron exists than here. Be that as it may, *at present there is but one Pittsburgh.* It is not probable there will be readily found the same facility for the distribution of manufactured iron, together with the ability to receive cheaply all the valuable ores and metal of the country; combined with quantity and quality of fuel; all augmented in their value by the large masses of not only permanently located skilled labor, but skilled masters and judiciously expended capital. As yet no geological examination has shown the same proximity of good ores and proper fuel; nor improvement developed the same natural and artificial receptive and distributive facilities held by the city of Pittsburgh.

Until such is the case Pittsburgh must remain the great iron market she always has been. Her large capital, consisting not only of money but of mills, furnaces, ore banks, iron mountains, coal mines, gaseous fuel from natural gas wells, skill and experience as well, creates every inducement of self interest, as well as furnishes ability to meet all competition. They must, from the very commercial force embraced in such a multiform yet homogeneous capital, control trade. Such huge aggregations of capital, natural advantages and productive ability, may, at times, meet trifling and temporary checks to their continuous progressive ratio; yet the very strength developed from their own internal force, gives irresistable power to their still increasing bulk, which aggregates continually. This is statistically true as to the history of Pittsburgh's progress. The statistics of her commerce and manufactures, when compared with the growth of the West, show it conclusively.

While active competitions now exist to wrest trade from Pittsburgh, especially in her iron and steel interests, yet we feel confident, from the present as well as the past of the iron trade of Pittsburgh, that she will not have in the future any more than now anything to fear from the iron mountains of Canada or Missouri, the iron deposits of Superior, the thick, rich ores of Tennessee and Georgia. Then, as now, they would, from facility of transportation, be hers as much as the fine ores of Ohio and Pennsylvania, while her growth in ability and increase in productive force will, as in the past, keep pace with the competition which draws her energies forth and calls upon her resources to maintain the mastery.

THE ROLLING MILLS OF PITTSBURGH ARE AS FOLLOWS:

STYLE OF WORKS.	Style of Firm.	Office.	Puddling Furnaces..	Heating Furnaces...	Trains Roll..........	Nail and Spike Machines.............	Capacity. Tons.....
Sligo	Phillips, Nimmick & Co	Carson, near Bridge	27	10	§5	.....	16,000
Juniata	Shoenberger & Co	15th and Etna streets	29	8	6	92	18,000
Etna *	Spang, Chalfant & Co	66 Sandusky street	29	9	6	22	20,000
Sable	Zug & Co	13th and Pike streets	34	11	6	55	18,000
Kensington †	Henry Lloyd, Son & Co	Second avenue	16	6	4	.....	11,000
Wayne	Brown & Co	10th and Duquesne way	28	4	§5	.....	10,000
Pittsburgh	J. Painter & Sons	96 Water street	52	15	13	.....	24,000
Birmingham	M'Knight & Co	In Bankruptcy	20	5	5	.....	10,000
Anchor	Chess, Smythe & Co	112 Water street	20	5	4	‖90	6,000
Pennsylvania	Everson, Macrum & Co	Second avenue	14	8	5	.....	6,000
Clinton	Graff, Bennett & Co	97 Water street	41	17	41	50	20,000
Milvale	do do	do do					
Vesuvius	Lewis Dalzell & Co	66 Anderson street	24	10	6	50	12,000
Iron City	Rogers & Burchfield	In Bankruptcy	9	5	6	.....	6,000
Eagle	Mullen & Maloney	Duquesne way and Cecil alley	20	10	.....	.....	10,000
M'Keesport	Wm. D. Wood & Co	111 Water street	7	16	4	.....	4,000
American	Jones & Laughlins	Third and Try streets	75	30	18	73	50,000
Glendon	Dilworth, Porter & Co	.....	24	6	5	¶9	10,500
Soho	Moorhead & Co	Second avenue	11	6	5	.....	10,200
Star	Lindsay & M'Cutcheon	98 Rebecca	14	4	4	.....	8,000
Fort Pitt	Reese, Graff & Woods	Penn avenue and 32d	22	15	7	.....	12,000
.....	Byers, M'Cullough & Co	98 Water street	26	6	3	.....	15,000
Ormsby	Wharton Bros. & Co	In Assignment	20	5	4	.....	14,000
Union Forge and Iron Mills	Wilson, Walker & Co	29th and Railroad	15	6	5	.....	9,000
Union Iron Mills	Carnegie Bros. & Co	33d and Railroad	29	10	7	.....	27,000
Monongehela	Lewis, Oliver & Phillips	92 Water street	60	12	8	.....	40,000
Allegheny	Lewis, Oliver & Phillips	91 Water street					
Pittsburgh Forge and Iron Co.	Pittsburgh Forge and Iron Co	Duquesne way and Cecil alley	15	7	†3	.....	13,000
Pittsburgh Bolt Works	Pittsburgh Bolt Works Co	In Bankruptcy	24	7	6	.....	15,000

ROLLING MILLS OF PITTSBURGH—CONTINUED.

STYLE OF WORKS.	Style of Firm.	Office.	Puddling Furnaces.	Heatihg Furnaces.	Trains Rolls.	Nail and Spike Machines.	Capacity. Tons.
Keystone	Glass, Neely & Co	In Bankruptcy	19	5	4		11,000
Superior	Harbaugh, Mathias & Co	In Bankruptcy.					
Solar	Wm. Clark & Co	35th and Railroad	17	5	5		6,000
Siberian	Rodgers & Burchfield	In Bankruptcy	6	6	6		
Scottdale	Everson, Macrum & Co	Second avenue	11	4	3		5,000
United States Iron and Tin Plate Works	United States Iron and Tin Plate Co.	Smithfield	6	3	6		

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* Originally run with water powre.
† Originally called the Dowlass; rebuilt in 1845, by Freeman, Miller & Co.
‡ Commonly called from his initials, Manuscript Mason.
§ 2 Steam Hammers.
‖ Also 50 Tack Machines.
¶ Spike Machines.

These thirty-three iron rolling mills have, as will be seen from the table, seven hundred and sixty-four puddling furnaces, and the capacity of the mills for production is four hundred and fifty thousand tons, or as before stated equal to one-ninth of the whole capacity in the United States, and one-sixth of all the puddling furnaces. It is equal to one-fourth of all the mills of Pennsylvania, seventy per cent. of all the mills in Ohio, ninety-four per cent. of all the mills in the New England States, eighty per cent. of all the mills in New York and New Jersey combined, one hundred and twenty per cent. of all the mills in the seven States of Delaware, Maryland, Virginia, North Carolina, Georgia, Alabama and West Virginia, one hundred per cent. of all the mills in Kentucky, Illinois, Tennessee and Indiana, and two hundred and thirty per cent. of all the mills in the balance of the United States.

These thirty-three mills, running full, consume 385,000 tons of pig iron, besides scrap iron and blooms. They use 150,000 tons of ore for "fix," and 3,000,000 fire brick. They consume 2,400,000 bushels of coal, employ 10,148 hands, whose wages average $6,560,000 annually. The capital in the buildings, machinery and ground is, as nearly as can be arrived at, $9,681,667, and the area covered by the mills is 510 acres. They produce, when running full, about 350,000 tons of bar, sheet and plate iron, also about 1,200,000 kegs of nails.

The value of the product it is difficult to give, owing to the fluctuating rates of iron in the past two years, and a mere estimate, owing to the various qualities, descriptions, and rates for special orders, or peculiar makes, would be nothing reliable. From the amount of pig metal consumed, the value of the rolling mill product may be assumed at about twenty million of dollars at present rates.

The iron produced by the M'Keesport works is really a separate class of iron manufacture, being a special article made by only one mill, and known as

RUSSIA OR PLANISHED STEEL IRON.

The manufacture of this article was established in 1851 by W. Dewees Wood, the present proprietor, under a patent granted to James Wood, the grandfather of W. Dewees, in 1841, and under an improvement by J. Wood Brothers, in 1844. The imitation of Russia sheet iron then made by this establishment, although equal in appearance to the imported article, would not resist the action of the atmosphere as well. This difficulty was partially overcome in 1861 through experiments by the present proprietor of the works. Other improvements were patented in 1865–67, but the required result was not obtained until 1873, through the present mode of manufacture, the principle feature of which is planishing by hammers.

The growth of this important branch of Pittsburgh's manufactures is the result of thirty years' experimenting and study on the part of the inventor, and the effect is that Pittsburgh is the only point in the country where an article of planished sheet iron is produced fully equal to the best Russia iron, and so endorsed by the heaviest metal dealers and consumers in the country. In the growing indications that the United States will, within the near future, compete with her old creditor, England, this stride of a Pittsburgh manufactory towards freeing the country from a dependence on Russia for its planished iron, is important; especially in view of the facts previously set forth as to Pittsburgh's ability and power in the production of iron and her facility for reaching foreign markets. There is not a little grim humor in the trade mark which the firm producing this iron has adopted, of an eagle throttling a bear lying prostrate on its back.

The establishment covers about five acres of ground, employs 300 hands, paying out $170,000 a year of wages. There is consumed in the works 5,000 tons pig and scrap iron and 600,000 bushels of coal, and four large steam hammers, weighing about three tons each and striking three hundred blows a minute, with a force of about twenty tons are used. The blows of these hammers imparts the peculiar gloss and dappled appearance of "Russia sheet," and closes the pores of the iron so effectually that it resists the action of the atmosphere fully as long.

This establishment fully illustrates the facilities of sites mentioned in regard to the manufacturing advantages of Pittsburgh. Located on the banks of the Monongahela river, a branch of the Pittsburgh division of the Baltimore and Ohio railroad runs through the works, giving those great facilities of receiving and shipping by either rail or water, cited in that chapter; barges being frequently loaded at the works with iron for St. Louis. The product of the mill is about four thousand tons common Juniata and planished sheet iron.

There is among the specialities of iron products in Pittsburgh, the manufacture of iron sponge, or deoxidized ore. This process is carried on by the Blair iron and steel company, who use an open hearth, " Seimans-Martin " furnace, for making cast steel ingots; also a cupola for the manufacture of the sponge, or cupola metal, a new carbide of iron, intermediate in character between cast iron and cast steel, which is used as a stock for the manufacture of cast steel or iron in mixture with common pig. It was established in 1872, and is at present only in partial operation. When in full operation the establishment will employ 75 men, whose wages will amount to $40,000 annually; the space occupied by the works is 2½ acres, and the capital in machinery, buildings and grounds $50,000.

COLD ROLLED POLISHED SHAFTING

Is also a special product of another of the rollings mills of Pittsburgh. This article is made at the American works of Jones & Laughlins, and has seventy-five per cent. more effective strength than the same size of turned iron, and is made no where else in the world.

This shafting is rolled out in the ordinary way, hot, and after being scaled is rolled through ponderous chilled rolls, five feet long by twenty-four inches in diameter, which, while reducing the diameter of the shaft, gives it a bright polished surface. The power which must be expended to overcome the friction of cold rolled shafting, is less by thirty per cent. than is required to overcome the friction of turned iron shafting of equal strength, and by its use thirty-five per cent. in weight and cost of shafting, hangers and couplings is saved. The building in which the shafting is manufactured is 600 by 200 feet, and about 200 hands are employed in its production. The invention was secured by a patent in 1859.

FOUNDRIES AND MACHINE SHOPS

Are the next in importance in the iron manufacture of Pittsburgh. The first foundry which was started in the western counties of Pennsylvania was Trumbull & Marmie's furnace, which was situated on Jacob's Creek, fifteen miles from its mouth, and went into blast on the first of November, 1790.

In 1803 the first iron foundry was established in Pittsburgh by Mr. Joseph M'Clurg. The growth of the foundry business in this city from that time was steady, and at periods rapid. It ranks second in the iron business of Pittsburgh in the amount of capital invested, extent of ground and buildings occupied, and number of hands employed. The variety of their staple castings is large ; and there is no description of foundry work which the skill, facilities and resources of the firms engaged in the business does not justify them in undertaking. Heavy mill gearing, railroad castings, copper mining machinery, rolling mill castings, cotton and sugar mills and presses, cannon, plows, chilled wheels, shafts, machines for punching, drilling and planing iron, &c., &c., hollow ware, stoves, grates, platform and other varieties of scales, steam engine work, a long list of articles known as domestic hardware, and in fact every description of form which necessities and luxuries demand, are daily turned out from foundries located in this community.

In these foundries may be cast articles ranging from the heavy Columbiad, (cannon,) weighing 100,000 pounds, throwing a ball of 1,000 pounds, to the finest Berlin work of articles not larger than a finger.

Forty foundries and engine shops occupy a space of 128 acres, and there is in the buildings, machinery and ground, capital to the amount of $2,-

292,000. They employ 1,936 hands, whose wages amount to $1,053,680, yearly, and use 69,980 tons of pig metal. They also consume, among other materials, 650,000 bushels coke, 544,000 bushels coal, about 100,000 bushels sand-loam, 200,000 fire brick, 400 tons fire clay, about $150,000 of iron and nails, 75 tons brass and copper, 500,000 feet of lumber, and the value of their product is about $4,300,000.

STEAM PUMPS.

There are three establishments manufacturing the above articles.

Style of Works.	Style of Firm.	Office.
Eclipse	S. D. Hubbard & Co	1st av. and Ferry.
Keystone	Epping, Carpenter & Co	32d and Penn.
Hutchison	Hutchison & Co	112 Liberty av.

These various works each produce a special pump, having its own peculiarities. They employ 46 hands, whose wages amount to about $40,000. The works occupy 100 by 450 feet, and the capital in machinery, buildings and ground is about $50,000.

DOMESTIC OR BUILDERS' HARDWARE.

FIRM.	Office.	Cupola.	Capacity Tons.
Jacobus & Nimick Manufacturing Co	Diamond street	1	2,000
Livingston & Co	253 Washington ave	1	1,500
Jarvis & Adams	Diamond street	1	1,500
Logan & Strobridge	108 Water street	1	1,600

These four firms employ 315 hands, whose wages amount to $140,000 annually. The space occupied by these works is 6 acres, and the capital in machinery and buildings is about $215,000. Their consumption of coke and coal is 73,000 bushels. There is used in the production of the articles they make, 3,250 tons pig metal; also about 3,000 gallons Japan and an equal amount of varnish. In this branch is included the manufacture of stock and ore, depot, dormant, pig metal, portable, platform and counter scales; paint, "kaughphy" and corn mills; copying presses; locks, of twenty different descriptions; a great variety of latches, bedstead castors and fasteners, weights, bell-pulls, sauce pan handles, wardrobe hooks, hinges, bolts, stands for fire and sad irons, umbrella stands, tobacco cutters, locking hasps, in fact every description of malleable casting and domestic hardware, and their product is about $450,000 yearly.

SADDLERY HARDWARE,

Embracing all the articles which the name implies, is manufactured by three establishments. The list embraces a long line of articles which it is useless to recapitulate, as they are familiar to all persons in the trade. The firms are:

FIRM.	Office.	Cupolas.	Capacity.
Samuel Reynolds	350 River ave.	1	1,200
Crawford Manufacturing Co.	293 Liberty ave	1	1,500
Gilliam Manufacturing Co*	293 Liberty ave	....	......

*Manufacture as a specialty Gilliam's Patent Coach Pads and Gig and Express Trees; the only factory of the kind west of the mountains.

These three establishments employ 285 hands, whose wages will amount to $126,000. They use 1,000 tons of metal, 100,000 tons of coal, 70,000 bushels of coke, 12,000 bushels sand, 5,000 lbs. of glue, 50 tons of wire, 12 tons of emery, 2,000 ounces of silver, 50 tons wrought iron, 50,000 fire brick, 50 tons fire clay, 24 tons of paper, leather to the amount of $12,000, silk thread and hair to amount of $1,500, boxes for packing to value of $14,500. The space occupied by the establishments is 4 acres, and the capital in machinery, buildings and ground is $265,000. The yearly value of their products is $370,000 to $400,000.

The manufacture of

PLOWS.

was also been a leading business in Pittsburgh. There are three plow works in the city. The full statistics of those cannot be given, one of the firms declining to furnish any information. The largest of the three, and from the variety and scope of the implements manufactured, is the

PITTSBURGH GLOBE PLOW WORKS, ALEXANDER SPEER & SONS, PROPRIETORS.

It is one of the largest plow manufactories in the country, and is a fair representative of Pittsburgh's industrial growth. The Globe plow works were established in the year 1828. Since that time they have been continuously in operation. The original factory was a one-story frame building, without a foundry, and occupied a space of twenty feet by one hundred. The present works occupy 270 by 240 feet, or over an acre and a half of ground, and is a two story brick with a foundry and a cupola of 2,000 tons capacity. The foundry floor occupies a space of 100 by 120 feet. The blacksmith shops and finish rooms are two story brick buildings, 60 by 270 feet. The store room floor, which is in the second story, is 60 by 230 feet. From eighty to one hundred hands are employed, and sometimes more.

The Globe plow works employ 80 hands, whose wages will average $50,000 a year. The establishment will consume 1,500 tons of pig metal yearly, $30,000 of woods, 300 tons of steel, and 500 tons of iron; and produce plows, cultivators and similar agricultural implements to the number of 90,000, having a value not far from half a million dollars. The capital in machinery, grounds and buildings is about $200,000.

The other factory was established in 1846, by Robert Hall, and is now carried on by Spratt, Johnston & Co. They employ 45 men, whose wages amount to $20,000. The value of their improvements is stated at $50,000, and their sales at $100,000.

BOLTS AND NUTS

Is another important branch of the iron business of Pittsburgh, there are in the city four factories.

Firm.	Office.
Standard Nut Co	....
Lewis, Oliver & Phillips	91 Water st.
Charles & M'Murtry	16th street.
Pittsburgh Manufacturing Co	28th street.

These four establishments employ 800 hands, and pay wages to the amount of $388,000. The establishments occupy eight acres of ground, and the capital in the machinery, buildings and ground is stated at $505,000. One of these, Lewis, Oliver & Phillips, however, employ a large proportion of their hands in the manufacture of what is known as heavy hardware, using the product of their rolling mills to the extent of 13,000 tons. Two others produce nuts and bolts exclusively. Lewis, Oliver & Phillips use 100 bolt machines, 20 nut machines, 25 punching machines, 10 hammers, and 108 miscellaneous machines. The Standard works use 15 nut machines, 3 bolt machines, 6 washer machines, 12 tapping machines, and consume about 6,000 tons iron. Charles & M'Murtry use about 4,000 tons. The product of these four establishments is about $1,280,000. The Pittsburgh Manufacturing Company, besides bolts, manufacture a variety of specialties of iron.

LOCOMOTIVES.

An important and growing industry of Pittsburgh is the manufacture of locomotive engines, which, though of recent origin, forms a considerable and interesting item in the aggregate value of products. There are in Pittsburgh and Allegheny two locomotive works. "The Pittsburgh Locomotive and Car Works," a joint stock company, chartered under the laws of Pennsylvania, for the building of locomotives, passenger and freight cars, was the pioneer in this business. The company was organized in 1865. The works are located in the Sixth ward, Allegheny city. The ground was broken for this largest manufactory within the limits of that city on August 1st, 1865, the shops were ready for operation in the autumn of 1866, and the first locomotive was turned out in the spring of

1867. Since that date the works have been in almost continuous operation; and although the buildings were liberally planned and furnished with machinery far exceeding any anticipated need, so rapidly did the business increase that frequent additions of machinery and buildings have been imperative. At this time the structures required in conducting the operations necessary for the production of a complete locomotive, cover nearly two and one-half acres in area. They are all of brick, built in the most substantial manner, and embrace the following: Machine shop, 290x120; engine room, 50x25; smith shop, 250x70; paint shop, 70x55; carpenter and pattern shop, 115x70, iron foundry, 135x70; flask shop, 35x23; cupola house, 23x22; brass foundry, 60x50; boiler shop, 250x70; pattern store room, 70x55; and other smaller buildings. The grounds have a frontage of 415 feet on Beaver avenue, running back to the Ohio river about 800 feet. Switches of the Cleveland & Pittsburgh Railroad, with tracks running into the enclosure, give easy connection with all railroads centering in Pittsburgh, greatly facilitating, as mentioned in the chapter on their manufacturing advantages, the receipt of supplies and shipment of their manufactured products. These latter are almost exclusively locomotives—the company never having embarked in the manufacture of cars. The locomotives constructed are of every class of broad and narrow gauge, from five to fifty tons weight, and adapted to all kinds of service. They are used in every section of the United States, and have achieved a high reputation. The annual capacity of the works is about one hundred locomotives of the class usually employed on full gauge railroads, to produce which requires the labor of some six hundred workmen, mostly skilled, and a vast array of machinery. The projectors of this establishment are reaping a fair reward for their enterprise in inaugurating it, and the aggregation of this body of mechanics has had a large influence on the growth and prosperity of the immediate locality.

The other works were established for the manufacture of light locomotives, and are carried on by Porter, Bell & Co. The works were established in 1861, by Smith & Porter. Their manufacture of locomotives is of such as are adapted to narrow gauge railroads, contractors' use, furnaces, mills, mines, and all kinds of special services; nothing over twenty tons weight being made. The establishment has turned out 145 light locomotives in the past fifty-four months. The establishment occupies one and a half acres of ground, and there is $150,000 of capital in the plant of the works, which has one cupola of 1,500 tons capacity. The establishment, during the past year, under the depression of business, has been running about one-half of its capacity, employing 116 hands, whose wages amounted to $60,000; used 120 tons of pig metal and $37,500 of steel, wrought iron rivets, etc. The office of the the works is at No. 5 Smithfield street, and the works are on the line of the Allegheny Valley Railroad, near Fiftieth street.

IRON BRIDGE WORKS.

There are two establishments manufacturing iron bridges in Pittsburgh.

Style of Works.	Style of Firm.	Office.
Keystone Bridge Works.	Keystone Bridge Co.	50th street.
Iron City Bridge Works.	C. J. Schultze.	198 Penn av.

These two works, when running full, employ 650 hands, whose wages will amount to $350,000 a year. They will use about 8,000 tons of iron. The space occupied by the works is seven acres, and the capital in machinery, buildings and ground, $425,000.

RAILROAD, SPIKE AND RAILROAD CHAIR WORKS.

The manufacture of these important articles is the exclusive business of one rolling mill, the "Glenden," Dilworth, Porter & Co. This extensive manufactory was started in 1852 by Porter, Rolfe & Swett. It is the only establishment of the kind in Pittsburgh. The railroad spikes are manufactured by "Swett's Railroad Spike Machine," the patent of which for the United States is owned by the firm.

The works cover an area of about two acres, and the capital in grounds, buildings and machinery is $400,000. Two hundred and twenty-five hands are employed, whose wages will average $175,000 a year. The capacity of the works is 65 tons a day, and during the war period the value of products was $1,000,000 yearly. The works have 8 spike machines, beside the puddling and heating furnaces enumerated in the table of rolling mills.

SPIKES AND BOILER RIVETS

Are, in addition to the quantities turned out by the nail factories attached to the rolling mills, manufactured by S. Severance, No. 50 Water street, who makes the production of those articles his peculiar business. The establishment originated in 1840 with L. Severance, and now employs one steam engine running 10 spike machines, with a capacity of 3,600 kegs a year. This factory employs 35 hands, and turns out 40,000 kegs of spikes and rivets a year, worth about $150,000; the machinery is valued at $500,000; and the space occupied by the works is 50 by 160 feet.

MANUFACTORIES OF WROUGHT IRON PIPE AND BOILER FLUES.

The manufacture of wrought iron pipe and boiler flues is one of the important branches of the manufactures of Pittsburgh. There are the following five firms engaged in the business:

Firm.	Office.
Spang, Chalfant & Co.	70 Sandusky street.
Evans, Dalzell & Co.	165 First avenue.
Byers, M'Cullough & Co.	98 Water street.
Rhodes & Potter	140 First avenue.
National Tube Works	Wood and Third avenue.

These five firms employ 1,290 hands, whose wages average $625,000 a year. The works occupy a space of 14 acres, and the capital in machinery, buildings and grounds is $1,150,000.

The capacity for production of these five works is equal to 80,000 tons a year; the actual product at present is about 60,000 tons. The National alone *now* converting 125 tons iron daily into pipe.

CAST IRON PIPE MANUFACTURERS.

One of these, the Franklin, was established in 1837, by Rowan, Edgar & Bradley, and is now carried on by James Marshall & Co. It has three cupolas of a capacity of 20,000 tons. The works occupy a space of about three acres, and the capital in machinery and real estate is about $90,000. The works when running full, employ 100 men, whose wages will amount to $40,000.

The other, the National, Wm. Smith & Sons, was established by Wm. Smith in 1854, and has four cupolas, stated to be of 15,000 tons capacity each. The space occupied by the works is five and a half acres. In 1874 the works, employed on a large contract, used 25,000 tons pig iron, employed 600 men, whose wages were $350,000. They used 500 tons of straw, 500 barrels of flour, 346,000 bushels of sand, 50 barrels of molasses, and 1,800 barrels of blacking. These works make pipe from 1½ inch to 50 inches in diameter, and have facility to manufacture 2 miles 2 inch, 3 miles 3 inch, 3 miles 4 inch, 3 miles 6 inch, 2 miles 8 inch, 2 miles 10 inch, 1 mile 12 inch, ½ mile 15 inch, ¼ mile 16 inch, ½ mile 20 inch, ½ mile 24 inch, 1 mile 36 inch pipe each week. These works, owing to circumstances, have not been running for the past two years, but are about going into operation again. The statistics of the past are given to show the capacity in that branch of business here as well as in others.

BOILER, STILL AND TANK MANUFACTORIES

Form another important division of the iron manufactures of the city: there are the following works:

FIRM.	Office.	Estab'd..	By
W. Douglass & Son	41 Carson	1833	Withrow Douglass.
R. Monroe	12 Water	1835	J. Litch.
D. W. C. Carroll & Co.	3d ave. and Liberty	1842	M. Stackhouse.
Jared M. Brush	61 Penn avenue	1852	W. Barnhill.
James Thorn & Co.	2d and Duquesne way	1866	M'Collister & Co.
Riter & Conley	55 Water	1861	James Riter.
Brenneman & Ward	26 Penn	1862	W. Barnhill & Co.
James Lappan & Co	17th street	1862	D. F. Agnew.
James M'Neel & Bro.	29th and Railroad	1865	Jas. M'Neel.
A. Stetler & Sons	17th street	1865	A. Stetler & Sons.
Eclipse Steam Manuf. Co.		1871	Eclipse S. M. Co.
Manchester & Sons	28th and Railroad	1872	Manchester & Sons.
James Cuddy & Co	Br's Bl'k, Duquesne way	1873	James Cuddy & Co.
Bauman, Sunday & Co.	3d and Duquesne way	1846	Bauman, Sunday & Co.

These fourteen establishments occupy a space of 42 acres, and the capital in machinery, buildings and grounds is $358,000. The amount in buildings or machinery in carrying on this business is not heavy, the machinery and facilities of tools and buildings required not being of an expensive nature. They employ 587 hands, whose wages amount to $269,000. They use 8,445 tons of sheet and plate iron, 750 tons of castings, 200 tons rivets, 110,000 bushels coal. Their production will average $1,500,000 a year. The building of iron tanks for holding the petroleum product of Western Pennsylvania, is a prominent feature in this branch of business. Some idea of the immense amount of tankage constructed may be found from the fact that D. W. C. Carroll & Co. constructed in twenty-four months 2,000 tons of tankage. Nor are the labors of this class of works confined to boilers, stills and tanks. In 1871, Wm. Douglass & Son built three iron tow boats, and in 1875 Riter & Conley constructed two iron boats to run on South American rivers. Workers in iron familiar with its constitution and its handling, experienced in its capabilities, the mechanics of the Iron City find no obstacles in the construction of anything of which iron is the material. To the skilled workmen of the city, the forge, the hammer and the iron bar or sheet, is what it is popularly fabled the jack-knife and the pine stick is to the ingenious New Englander.

WESTINGHOUSE AIR BRAKE.

The building in which these wonderful brakes are manufactured at Pittsburgh, is 264 feet long by 100 wide. There are employed in it, in the production of the various brakes made, 120 hands, whose wages amount to $75,000 a year. There is consumed at the present time 900 tons pig iron, 200,000 bolts, 250,000 feet gas pipe, 50,000 rubber hose, 15 tons rivets, 50 tons ingot copper, 20 tons malleable fittings, 100 tons merchant iron and forgings, 37,500 bushels of coal, and the products of the works in six years has reached $2,250,000 in value.

There are manufactured the Westinghouse Automatic Air Brake, Vacuum Brakes, Locomotive Driver Brakes, Westinghouse Freight Brakes and Truss Brake Beams. These brakes are in use in Canada, New Brunswick, Mexico, Cuba, Peru, Chili, Equador, Belgium, England, New Zealand and Australia, all supplied from Pittsburgh.

CORNICE MANUFACTURERS.

There are two manufactories of cornices from galvanized iron in operation:

Firm.	Office.
H. Adler	152 First avenue.
Rasner & Dinger	16 Market street.

They employ 30 hands, whose wages are $16,000 a year, consume about $16,000 of galvanized iron, $5,500 of zinc, $5,000 tin plate, 8,000 lbs. solder, and produce $50,000 of cornices, window caps, &c.

WOOD-WORKING MACHINERY.

There are two firms whose business is the manufacture of the above description of machinery, such as planers, matchers, mortising, tenoning and re-sawing machines. The firms are:

Firm.	Office.
M. B. Cochran & Co	121 Liberty street.
M'Nish & Butler	104 Liberty street.

They employ 90 hands, whose wages amount to $49,000. The space occupied by the works is 124 by 169 feet, and the capital in machinery and buildings is $50,000. The product of the works is $150,000.

PLUMBING AND GAS FITTING.

This branch of business is as largely carried on, in a great number of establishments, as is required by the necessities of all large cities, and the number of gas fitting shops of all grades is forty-five. Most of the large shops are included in the brass foundries and in the steam fitting establishments. As near as could be ascertained there are about 200 hands employed in this branch of business, whose wages will average about $90,000 a year, and the work will amount to quite $650,000 a year. They consume gas fixtures, wrought iron pipes, malleable iron fittings, cement, iron castings, iron ware, bath tubs, terra cotta pipe, putty, earthen ware, lead pipe, brass work and minor articles, but the details of the consumption of each item were not satisfactorily attainable.

STEAM FITTING.

There are six establishments which make this a principal and distinctive feature of their business, although each, more or less, work in plumbing and gas fitting, and also brass founding. These six are

Firm	Office.
Craig Bros	139 Second avenue.
Jarvis, Halpin & Co	35 Fourth avenue.
S. Cadman & Son	Duquesne way.
J. B. Sheriff & Son	68 Water street.
Atwood & M'Caffrey	50 to 60 Third avenue.
Wilson, Snyder & Co	Third avenue and Liberty.

These six establishments carry on steam heating and fitting in all its details. They employ 40 men in this branch of their business, whose wages will amount to about $24,000 a year, They use about 600,000 feet of pipe, and produce work to amount of $200,000 a year.

THE MANUFACTURE OF GUN BARRELS

Is carried on by James Brown & Sons, who established the Enterprise Gun Works in 1848, and consume about 20 tons iron and 2 tons steel a year; employ 20 men in these works, whose wages will amount to $14,000 annually. There are in use in the works seven turning lathes, two planers, two punching machines, two drilling machines, one bending machine, one steam hammer.

PITTSBURGH CAR WHEEL WORKS.

This establishment is the only foundry of its kind in Pittsburgh. It was established in 1870 by John L. Gill, Jr., and occupies two and a half acres of ground. The works employ on an average 40 hands, whose wages are $20,000 annually. Cold blast charcoal hanging rock metal is almost exclusively used in this foundry, of which about 3,600 tons are yearly consumed. The capital in buildings and machinery, etc , is $150,000 ; about 50,000 bushels coal and coke are used in the smelting. The office of the works is at 83 Wood street, Pittsburgh, and the works on Preble avenue, Allegheny city.

JOBBING MACHINISTS AND IRON RAILING MANUFACTURERS.

There are three firms who may be thus classed under this division of business of the city.

Firm.	Office.
James Brown	136 Wood.
Marshall Bros	71 Diamond street.
J. Cochran & Bro	86 Third avenue.

These three firms employ 60 hands, whose wages will amount to about $35,000 a year. The capital in machinery and buildings is $110,000, and the space occupied by the works is about one acre. The products of these works will average yearly from $160,000 to $175,000. Their products are varied, embracing all descriptions of wrought iron work.

STREET LAMP FACTORY.

This is a new branch of Pittsburgh manufactures, having been established in 1872 by Samuel Morrow, at 112 First avenue. At present it employs but four hands, and produces about 2,000 lamps a year, and is but the nucleus of a larger business. Lamps from this factory have been furnished to states as far west as California.

There are eight firms that may be classed as

SHEET IRON, TIN AND COPPER WORKERS.

Firm.	Office.
J. B. Sherriff & Son	68 Water street.
J. T. Kincaid, Jr.	107 First avenue.
E. W. Demmler	180 Liberty street.
Sam'l Morrow	112 First avenue.
Daeweritz & Roedel	151 First avenue.
Wm. Barnes	47 Market street.
John Burford	50 Water street.
Totten & Beiter	157 Wood street.

These use yearly 12,000 tin plate, $17,000 sheet iron, $19,000 sheet copper, 9,000 lbs. solder, employ 60 hands, and pay $30,000 wages; and produce $120,000 of manufactured articles. There are in addition to those a number of small jobbing shops, employing from one to two men, whose statistics are not attainable or important.

IRON SAFE MANUFACTURERS.

Of these there are three in Pittsburgh.

Firm.	Office.
S. S. Wks, Thos. Barnes	129 Third avenue.
Pitts. Safe & Lock Co.	167 Penn avenue.
Reisick & Bro	16th and Pike.

These establishments employ 120 hands, whose wages amount to $88,000. They use $7,500 of locks, $7,200 of steel, $3,000 of sheet iron, $2,500 of brass castings, $7,000 of cement, $10,000 of furnishing goods, occupy 2½ acres of ground, and have $103,000 in machinery in use. Among that machinery is 15 lathes, 24 drill presses, 7 punching machines, 5 shearing machines, 12 grinding machines, 2 trip hammers, 3 planers. Their produce is about $150,000 yearly.

STEEL MANUFACTURING AT PITTSBURGH.

There are now at Pittsburgh ten steel manufacturing works, shown in the following table, who manufacture all descriptions of fine edge tool cast steel, agricultural steel, German or blister steel, saw steel, and in fact all varieties.

These ten works have in the aggregate 24 Siemens melting furnaces, 292 coke melting furnaces, 60 trains of rolls, 88 steam hammers, beside 18 helve and trip hammers, 60 puddling furnaces, 170 heating furnaces, 9 steel cementing furnaces, 5 open hearth furnaces. They employ an average of 2,000 hands, whose wages will amount to $1,100,000. They use about 15,000 tons pig metal a year, and 21,500 tons of blooms and scrap steel, 1,000,000 fire brick, 950 tons fire clay, 2,500 tons ore, 3,000,000 bushels coal, 1,500,000 bushels coke. The space occupied by the works is 86 acres, and the capital in buildings, machinery and ground is about $3,000,000. The annual product of steel is about 27,000 tons, worth $4,200,000. The capacity is quite double the production, and the Pittsburgh mills could supply the entire demand of the county, if run to their full capacity. In steel, as in iron, Pittsburgh is the preponderating manufacturing community of the United States, and it is, as before observed, to the perseverance, pluck and business acumen of Pittsburgh steel manufacturers, that the country is to-day indebted for its emancipation from dependence upon foreign steel manufactories, and placed in an independent position, so far as supply of steel is in question, in all qualities, whether, for the arts and uses of peace, or the sterner demands of national defence.

STEEL WORKS.

STYLE OF WORKS.	Style of Firm.	Office.	Coke Melting Holes	24 Pots—Siemen's	Trains Rolls	Steam Hammers	Converting Furnaces	Puddling Furnaces	Heating Furnaces	Capacity—Tons
Pittsburg	Anderson & Woods	First avenue and Ross	48	4	10	16	6	3	25	7,000
Sheffield	Singer, Nimick & Co	82 Water street	30	4	12	11	8	12	17	12,000
....	Hussey, Wells & Co	17th street and Penn avenue	75	6	9	13	....	16	20	13,000
Black Diamond	Park Bros. & Co	30th and Smallman	72	2	6	21	....	6	48	10,000
La Belle	Smith Sutton & Co	26 Ridge avenue	24	....	3	8	4	6	20	6,000
Duquesne	J. S. Liggett	Spruce and Market	....	....	1	2	1	....	5	....
Crescent	Miller, Metcalf & Parkin	339 Liberty street	34	4	4	6	3	....	8	4,000
Fort Pitt	Reese, Graff & Woods	32d street and Penn avenue	12	2	3	5	2	6	20	....
Wayne	Brown & Co	Eleventh street	24	1	....	2	2	....	*	....
Pitt	Jones, Ingold & Co	4th avenue and Smithfield	....	†1	....	4	....	2	7	2,400

* See Rolling Mills. † 1 natural gas furnace. These works were built in anticipation of natural gas, and have now from a well only through the first sand, sufficient gas to run the boiler and one melting furnace.

THE EDGAR THOMSON STEEL WORKS.

The above company for the production of steel rails is a speciality among the steel works of Pittsburgh, being constructed and worked solely for the making of rails. The works are located at Bessemer, on the main line of the Pennsylvania railroad, and on the Connellsville division of the Baltimore and Ohio railroad.

The whole area of ground is 106 acres, and the buildings now erected are: Cupola house, 107 feet long, 44 feet wide and 46 feet high. Converting house, 129 feet long, 84 feet wide and 30 feet high. House for blowing engines, 54 feet long, 48 feet wide and 36 feet high. Boiler house, 178 feet long, 40 feet wide and 18 feet high. Producer house, 90 feet long, 46 feet wide and 26 feet high; rail mill, 380 feet long, 100 feet wide and 25 feet high, with a wing 100 feet long, 35 feet wide and 17 feet high. Office and shop building, 200 feet long, 60 feet wide and 18 feet high. A coal and iron house, 40 feet long, 20 feet wide and 10 feet high. The producer house and rail mill have iron side columns with timber side framing. All the others are wholly of brick, and all, without exception, have iron roof frames and coverings.

The capacity of the works is 200 tons ingots each twenty-four hours, and 225 tons of rails if rolled in double lengths, and 200 tons if rolled in single lengths. The works have made 220 tons on a single turn, and 4,000 to 4,500 tons in a month. The works employ 500 men, whose wages will average $400,000 a year, and will consume 50,000 tons pig metal a year. The capital in the machinery, building and ground is $1,000,000.

The Pittsburgh Steel Casting Company was established in 1871, and the works occupy two and one-half acres of ground. The capital in machinery, buildings and grounds is $100,000. From a start with a few crucible fires, the establishment has increased until it now has nineteen smelting holes, one Siemens open hearth gas furnace, one Siemens pot furnace, gas furnace also, and a capacity of eleven tons per day.

Their annual produce is about 800 tons. There is an average of seventy-five men employed when running full, whose wages amount to $60,000 a year, and there is consumed 300 tons of steel, 500 tons of wrought iron, 50,000 bushels of coal and 25,000 bushels of coke. Starting at first in a modest way, and operating under a patent method, they make castings of *genuine fine grained crucible cast steel,* capable of hardening, forging and temper-drawing, and which would make castings as fine as any material almost that is run into moulds, with sharp and perfect edges, smooth surface, and capable of coring, hollow work, interstice work, and yet free from blow holes and sand-mixed spots.

TOOL WORKS, AXE, SAW AND SHOVEL FACTORIES.

The making of tools is another important branch of the manufacturing business of Pittsburgh. While iron is largely used in their production, yet they are classed under the steel manufactures of the city, as being more of a steel manufacture. There are five manufactories, viz:

Firm.	Office.
Klein, Logan & Co	33d and Railroad streets.
Kloman, Park & Co	32d and Railroad streets.
Hubbard, Bakewell & Co.	Dinwiddie and Colwell.
Hussey, Binns & Co	27th and Railroad streets.
Metcalf, Paul & Co.	331 Penn avenue.

These five factories occupy a space of 46 acres, and the capital in buildings, machinery and ground is about $311,000. They employ 430 hands, whose wages in a year amount to $210,000. About 725 tons of steel and 3,500 tons of iron are used in the production of their articles. 270,000 bushels of coal and 180,000 bushels of coke are consumed for fuel, and about 700 tons of grindstones a year. Their product will amount to $545,000 annually.

FILES.

The manufacture of files is carried on by the Eagle File Works, at Twentieth and Liberty streets, having the office at 50 Seventh avenue. These works were established in 1840 by John England, who then and in subsequent years employed five men. The works now employ thirty-five men, whose wages will amount to about $18,000 a year. The capital in machinery and buildings is about $30,000, and 16,000 dozen of files are turned out annually. About 60 tons of steel and 12,000 bushels of coal are consumed.

CRUCIBLE MANUFACTURERS.

There are three works producing crucibles for steel manufactories and other uses, but principally for the melting of steel, viz:

Firm.	Office.
M'Cullough, Dalzell & Co.	36th and Railroad.
D. F. Agnew & Co.	120 Rebecca street.
Hussey & Co.	49 Fifth avenue.

These three works employ 57 hands, whose wages amount to $42,000, and produce 200,000 crucibles, worth about $400,000.

LEAD, COPPER AND BRASS.

PIG LEAD.

The production of this metal is carried on by but one establishment in this city. The Pennsylvania Lead Co., whose office is at the corner of

Wood street and Third avenue, was established in 1875 for the purpose of producing lead from the ores and base bullion brought from Colorado, Utah and California. The establishment also uses ores from Mexico. There are employed in the processes eighty men whose wages average from $60,000 to $70,000 a year. The freights amount yearly to over $400,000; and there is 600,000 bushels of coal and 200,000 bushels of coke consumed a year. There is also used 3,500 tons of iron cinder, 1,500 tons of limestone, and 150 tons of metallic zinc a year. The product is given as from 750 to 1,000 ounces of silver a year, worth $1,400,000, and 8,500 tons pig lead worth $1,200,000. The product of lead is disposed of to manufacturers in New York, Philadelphia and Baltimare, as well as at Pittsburgh.

WHITE LEAD.

The manufacture of red lead is mentioned in 1810 as having been carried on in Pittsburgh, when in the list given by the census, there were enumerated three red lead factories, producing leads to value of $13,100. In 1813 there is noticed in Cramer's Almanack, "one white lead factory (Beelin's)." In 1817 the committee of Councils reported one white lead factory, employing six hands and producing leads to value of $40,000. In 1837 there were eight lead factories producing 74,496 kegs of leads valued at $206,000. In 1857 there were three firms employing 65 hands, whose product of white and red lead was valued at $443,000.

It will be noticed on a comparison of the white lead business of 1857 with that of 1837, that there is a falling off of five factories, but it will also be observed that the three factories of 1857 produce 2,754 tons of lead, where eight factories of 1837 produce 902 tons, being an increase of over two hundred per cent.

In 1876 there are seven white lead factories in operation, and one which, from business complications, has been closed for the past three years. The six in operation are

Firm.	Office.
T. H. Nevin & Co.	67 Fourth avenue.
C. A. Wells & Co.	42 Fifth avenue.
Fahnestock White Lead Co.	76 Wood street.
Davis, Chambers & Co.	167 First avenue.
Beymer, Bauman & Co.	42 Fifth avenue.
Armstrong & M'Kelvey	37 Wood street.

These factories employ about 175 hands, whose wages will average $100,000 annually. They use 5,000 tons of pig lead, and produce about 200,000 kegs of paint leads of twenty-five pounds each. The space occupied by the factories is equal to three acres, and the capital in machinery, buildings and ground is about $450,000. There is consumed in the manufacture 150,000 gallons of linseed oil, and about 250,000 pounds of acetic acid. The value of the kegs used in packing is $50,000.

COPPER MILLS.

There are two copper rolling mills at Pittsburgh, and one copper smelting works. The smelting were works originally established to smelt the product of the famous Cliff Mine. It is not now in operation. The rolling mills are those of

Firm.	Office.
C. G. Hussy & Co.	49 Fifth avenue.
Park & Co.	122 Second avenue.

These two establishments produce copper in its various rolled forms, and employ about 100 hands, whose wages will amount to an average of $75,000 a year. They consume about 1,100 tons of coke and ingot copper, and produce from $600,000 to $700,000 of rolled and stamped copper. The space occupied by the works is about seven acres, and the capital in machinery, buildings and ground, is given at $276,000.

BRASS FOUNDRIES.

There are ten brass foundries in Pittsburgh.

Firm.	Office.
Loughrey & Colls	131 First street.
A. Fulton's Sons & Co.	91 First avenue.
Bailey, Farrell & Co.	167 Smithfield street.
Craig Bros.	139 Second avenue.
Mansfield & Co.	13 Second avenue.
John Fitzimmons	1st and Carson.
Atwood & M'Caffrey	50 to 60 Third avenue.
J. B. Sheriff & Son	68 Water street.
S. Cadman & Son	Duquesne Way, N. 6th.
Wilson, Snyder & Co.	Third avenue and Liberty.

These ten establishments consume 218 tons copper, 266 tons scrap brass, 1,700 crucibles, 100 tons lead, 22 tons of tin, 37,000 pounds of antimony, 60,000 bushels coke, 60,000 bushels coal in a year, and employ 35 moulders, whose wages will amount to about $25,000 a year. The works occupy an area equal to two acres of ground; and the capital in buildings, machinery and ground is $216,000.

THE OIL TRADE OF PITTSBURGH.

Although lard, linseed and other manufactured oils are made at Pittsburgh, yet by the oil trade is generally understood the transactions in crude and refined petroleum and its products. Fifteen years ago this business had no existence. It is the success which has followed the experiments in refining petroleum that has largely created the trade. By the refining process, this oil became an illuminator of great cheapness, and at once took the markets of the world from that reason, as well as by the beauty of its light, and added to the resources of the nation another article of export, which in the fifteen years since its utilization has risen to the rank of third in values of our exportation.

The following table presents the oil refineries now at Pittsburgh, together with their actual capacity in crude oil. The tankage capacity in the subjoined refineries is equal to 784,181 barrels:

STYLE OF WORK.	Style of Firm.	Office.	Stills…	Barrels Crude. Capacity weekly.
American	Holdship & Irwin	49 Fifth avenue	8	6,828
Aladdin	Aladdin Oil Co	83 Fourth avenue	3	1,017
Brilliant	Lockhart & Frew	174 Wood street	9	12,078
Bly's	David Bly & Co.	Duquesne way, near 9th st,	4	2,400
Cosmos	R. S. Waring	49 Fifth avenue	6	7,304
Citizens'	Citizens' Oil Works	7th st. and Duquesne way,	9	7,072
Central	Central Refining Co	20 Fifth avenue	13	21,867
Crystal	Livingston Bros	7th st. and Duquesne way,	3	2,624
Eagle	Wm. P. Logan & Co	Fifth avenue	4	2,444
Empire	David Richard		3	660
Federal	King & Goodman	8th st. and Duquesne way,	5	2,456
Fairview	D. Hostetter		3	2,136
Iron City	John Speer & Co.	8th st. and Duquesne way,	3	1,500
Keystone	Ph. Weisenberger & Co.	8th st. and Duquesne way,	2	1,018
Liona	J. C. Kirkpatrick & Co.	3 Eighth street	2	564
Lilly	Brooks, Ballentine & Co.	7th st. and Duquesne way,	6	2,072
Liberty	John A. M'Kee & Son	56 Fifth aveuue	7	5,948
Model	Model Refining Co	7th st. and Duquesne way,	2	3,233
Miller's	A. D. Miller	Washington & Preble aves	4	5,238
National	Standard Oil Co	7th st. and Duquesne way,	6	5,538
Nonpareil	Lockhart & Frew	174 Wood st	3	1,318
Penn	H. S. A. Stewart	8th st. and Duquesne way,	3	1,854
Peerless	Central Refining Co	20 Fifth avenue	2	3,758
Petrolite	Wormser, Meyers & Co.	47 Market street	2	1,703
Radient	J. T. Stockdale	8th st. and Duquesne way,	3	1,906
Riverside	Elkins & Flack	9th st. and Duquesne way,	5	1,809
Star	E. J. Waring	49 Fifth avenue	5	3,718
Standard	Standard Oil Co	7th st. and Duquesne way,	5	7,250
Vesta	R. S. Waring	49 Fifth avenue	8	9,058

From this it would appear that there are twenty-nine oil refineries in Pittsburgh, having 138 stills, with a weekly capacity of distillation of crude petroleum of 126,371 barrels a week, or a capacity of production of 95,000 barrels refined oil weekly, which, if they all run full time for 48 weeks, would equal 4,560,000 barrels a year. This is a decrease from the number of refineries in 1866, of just fifty per cent.; but it is *an increase of two hundred per cent.* in refining capacity in ten years. There being 58 refineries with a weekly capacity of 31,500 barrels in 1866, as against 29 refineries, with a weekly capacity of 93,000 barrels refined oil in 1876 Although the refineries of 1875–6 are not run run to anything like their full capacity, yet the proportionate increase in capacity is maintained in actual results under the partial running of the works. In 1866 the exportation of refined oil from Pittsburgh, by railroad to the east alone, was 424,848 barrels; and in 1874 it was 1,247,641; being in the actual amount of oil refined an increase over the trade of 1866 of 849,696 barrels, or quite two hundred per cent. in perfect unity with the increase of refining capacity, and demonstrating an absolute increase of that proportion in the oil trade in ten years, as shown by shipments to the east alone. To this is to be added those to the west and by river. In 1875 this increase fell off from inability of Pittsburgh refineries to ship profitably, owing to the schedule of railroad freights, by which Cleveland was enabled to enter the market more advantageously. The decrease caused by this freight discrimination was equal to 150,553 barrels; but even under this disadvantage the showing is still, in an exceptional year, a gain of one hundred and sixty per cent. in the volume of trade in ten years. This decrease is one of the temporary incidents that occur in all great traffics, and has but resulted in opening other avenues for shipment, that will, during this year, not only show a return to the full two hundred per cent. of increase in trade in the past decade, but gives evidence of a yet further increase.

At the present time the oil trade of Piitsburgh is one of great magnitude. The following table shows the receipts of crude oil for the years specified at Pittsburgh:

	Barrels.		Barrels.
1859	7,663	1868	1,031,227
1860	17,161	1869	1,028,902
1861	94,102	1870	1,050,810
1862	171,774	1871	1,146,492
1863	175,181	1872	1,186,501
1864	208,744	1873	2,035,182
1865	630,246	1874	1,648,253
1866	1,263,326	1075	1,858,301
1867	727,494		

The subjoined table exhibits the shipments by rail to the east in the eleven years given:

	Barrels.		Barrels.
1865	298,111	1871	733,943
1866	424,848	1872	743,510
1867	498,221	1873	869,946
1868	724,991	1874	1,247,641
1869	596,475	1875	1,097,086
1870	811,158		

The following table gives the average production for the past seven years of the Pennsylvania oil regions :

	Bbls. a day.	Bbls. a year.		Bbls. a day.	Bbls. a year.
1869	11,529	3,458,700	1873	27,098	6,129,600
1870	15,479	3,642,700	1874	29,363	8,778,900
1871	15,879	3,763,700	1875	23,212	6,963,600
1872	17,243	5,172,900			

The totals for the year are arbitrarily computed on 300 working days each year. It is not asserted that that is the average time, as many of the wells flowing would produce 365 days, yet, as the pumping wells would necessarily, from various causes, lose many days ; the data assumed is, perhaps, on the average not far from exact. By a comparison of the table it will be seen that in the proportionate increase of production at the wells and shipments of crude, and exportation of refined from Pittsburgh, that the oil trade of the city in its increase, keeps pace even under the disadvantages previously stated, with the increase of production.

The value of the products of the refineries of Pittsburgh, as a money item in the whole bulk of the city's commerce is, under the very low prices that have rated in the past two or three years, presented at a disadvantage. It is, however, a handsome aggregate at even those prices. The aggregate for 1875 has been, estimating 42 gallons to the barrel, about $4 50 per barrel, at which rate the shipments of refined would amount to $4,936,369. The production of this amount of refined oil would require 600 hands, whose wages would average about $300,000. The refining used 41,500 carboys of acid, worth $130,985 ; also 234,300 pounds of caustic soda, worth $12,472 ; rosin to the amount of 88,000 pounds, worth about $1,300 ; paint to the amount of 275,000 pounds, worth $19,250 ; also, 220,000 pounds of glue, worth about $33,000. The barrels would require about ten pounds of iron to each barrel, which would be about 5,500 tons of hoop iron, worth $440,000, and the barrels at a rate of $1 25 each, would aggregate to a cost value of $1,371,500. The space occupied by these 29 refineries is 378 acres, and the capital in the machinery, buildings and grounds is about $2,248,000, as nearly as can be arrived at. The refining of oil, while it is the largest portion of the oil trade of the city, does not embrace all the transactions therein. There are in addition to the refineries, the following manufactures of

LUBRICATING OIL.

Firm.	Office.
Mills, King & Co	1 Eighth street.
H. M. Graham	27 Seventh street.
F. Mason	2 Seventh street.
Paine, Ablett & Co	27 Seventh street.
Grim & Bros	236 Penn avenue.
S. M. Hebron & Co	2 Duquesne way.

These firms handle about 30,000 barrels of lubricating oil a year, whose value is $210,000. In addition there are a number of dealers or brokers in oil, but the statistics of their business are so largely included in that of the oil refineries and the general statistics of the petroleum trade, that their presentation would be nearly, if not quite, a duplication of the figures already given of the receipts of crude oils and the shipments of refined.

There are, in addition to the product of petroleum, three

MANUFACTORIES OF LARD OIL.

Firm.	Office.
James Dalzell & Co	70 Water street.
F. Sellers & Co	329 Penn avenue.
Reese, Owens & Co	21 Seventh avenue.

These firms have 165 presses; of their capacity in consumption in lard and production no figures could be had.

There are also two firms manufacturing

LINSEED OIL.

Firm.	Office.
M. B. Suydam	Rebecca and Craig.
Thompson & Lyons	West Diamond.

These two employ 26 hands, whose wages will average $13,520 yearly. They use 143,000 bushels seed a year, produce 143,000 gallons of oil, and 3,000 tons oil cake. They employ six horses and two wagons, and the capital in machinery and buildings is $65,000. The space occupied by the factories is 10,000 square feet, and their sales average $200,000 annually.

There is in the foregoing exhibit of Pittsburgh and Allegheny in the Centennial year much which might have been perhaps more fully and better presented. The attainment of statistical information is, under the most favorable circumstances, a labor of vexation and perplexity, and beset with many liabilities to error. In a *reticent city* like Pittsburgh, such impediments are multiplied. Much as has been said of the Birmingham of America, much remains unsaid from the difficulty of obtaining and delay in giving the information necessary, and also by that which has already been presented greatly overrunning the proposed limit within which it was expected the story of the growth of Pittsburgh and Allegheny cities, and their business could be told. What those establishments are in detail is generally shown in the preceding pages. What they aggregate in bulk is best shown by stating that if they were placed in a compact form they would form a body or would occupy a space of 1,867 acres, or extend 77 miles, giving each an average space of 200 by 200 feet.

The United States produced in 1873, among other forms of iron, 2,290,658 tons pig iron, 721,775 tons of iron rails, 980,000 tons rolled iron of other kinds.

To manufacture the 2,290,658 tons of pig metal requires two and a quarter tons of coal to each ton of pig, or 5,153,980 tons of coal. The 721,775 tons of iron rail take 1,443,550 tons, and the 980,000 tons of rolled iron 2,352,000 tons, or in all 8,935,530 tons of coal. At a royalty of one-half cent per bushel the owner of the coal receives $1,249,974. The proprietor of the colliery, who markets the coal, benefiting to the extent of one cent per bushel over his working expense, receives $2,449,948. Eighty-four cents per ton is a fair average of coal miners' wages, and at this rate, $7,499,844 is the sum the miners obtain.

Two tons of ore is the amount accepted as requisite to produce a ton of pig iron. It will then require 4,581,316 tons of ore to produce the 2,290,658 tons of pig made in 1873. Estimating the average cost of mining at one dollar and a half a ton, we have $6,871,974 as the sum the ore miners alone obtain. To produce the amount of pig our figures give as the product of 1873, requires over two hundred and fifty such furnaces running full time. Here is an expenditure of over twenty-five millions of money. The average labor to produce a ton of pig iron from the ore being one man to each ton made, this would require 7,633 men working three hundred days each. The average wages of men employed about each furnace is $720 each, making a total of $5,504,835.

The labor of 43,040 men would be required to manufacture the 1,701,775 tons of rail and roll iron made in 1873. The average wages of the mill hands is $750 each. Over $32,250,000 is thus distributed. The entire distribution of wages for the mere items of ore, coal, furnaces, building and labor in the production of a similar weight of iron as in 1873, in the United States, is nearly $130,000,000. Of this, Pittsburgh pays one-fifteenth in the distribution of wages in her furnaces and rolling mills, to say nothing of the amount to those who work the iron her mills produce into forms and condition beyond the simple pig and bar.

The entire wages paid in the manufactories of Pittsburgh are over $30-000,000 annually; and the capital in the buildings and machinery of her factories alone, and the ground they occupy, are, as nearly as could be arrived at, $43,216,955.

ALLEGHENY VALLEY—CONTINUATION OF THE TOUR.

The Allegheny river rises in Potter county, Pennsylvania, and runs in a north-westerly direction across that county and M'Kean, entering the state of New York, and returning in a circuitous route, re-enters the State of Pennsylvania, passing through the counties of Warren, Forest and Venango, touching the north-east corner of Butler and continuing its course along the borders of Clarion, passing through Armstrong and uniting with the Monongahela at Pittsburgh, in the county bearing its name. Long prior to the revolutionary war it was explored and navigated by the French, who erected forts and established trading posts upon its banks. The history of the settlements upon its shores is, however, well known to the reader. Many years subsequent to the revolution, and in fact until the construction of the Allegheny Valley Railroad, the Allegheny river was the great outlet for the inhabitants along its borders nearly its entire length. Vast fleets of lumber and produce were annually borne upon its bosom seeking either a market at Pittsburgh, or towns along the Ohio. The discovery of petroleum in such fabulous quantities about seventeen years ago, and the consequent demand for ready and reliable transportation accelerated the continuation and completion of the Allegheny Valley railroad to Oil City. The river was only navigable at certain periods and the great influx of capital in the oil regions could not brook delay. It demanded transportation north and south, east and west, at all seasons of the year.

Although the year 1875 has been marked by a general depression in business, affecting the carrying trade of railroads, as well as the industrial pursuits, yet the following tables showing the business done by the Allegheny Valley railroad and its branches presents a fair exhibit:

DOINGS OF THE YEAR IN TRANSPORTATION, AND TOTAL MILES RUN.

Number of miles run by passenger trains	461,942
Number of miles run by freight trains	984,473
Number of miles run by coal trains	11,666
Number of through passengers for the year on main road	11,758
Number of passengers (all classes) carried in cars	694,858
Number of tons of 2,000 lbs. of through freight for the year on main road	59,342
Number of passengers carried one mile in the State of Pennsylvania	12,448,965
Number of tons of freight carried one mile in the State of Pennsylvania	95,859,906
Gross amount of tonnage for the year, (2,000 lbs per ton.)	2,054,995
Average rate of speed adopted by ordinary passenger trains, including stops, (miles per hour,)	20
Average rate of speed adopted by express trains including stops	20
Average rate of speed adopted by freight trains, including stops	12
Weight of first-class passenger engines	33 tons.
Weight of freight engines	33 to 35 "

Monthly statement of passengers (all classes) carried in cars:

November, 1874	58,594	June, 1875	57,777
December, 1874	56,782	July, 1875	66,927
January, 1875	45,663	August, 1875	63,624
February, 1875	40,562	September, 1875	65,245
March, 1875	51,120	October, 1875	64,452
April, 1875	64,122		
May, 1875	59,990		694,858

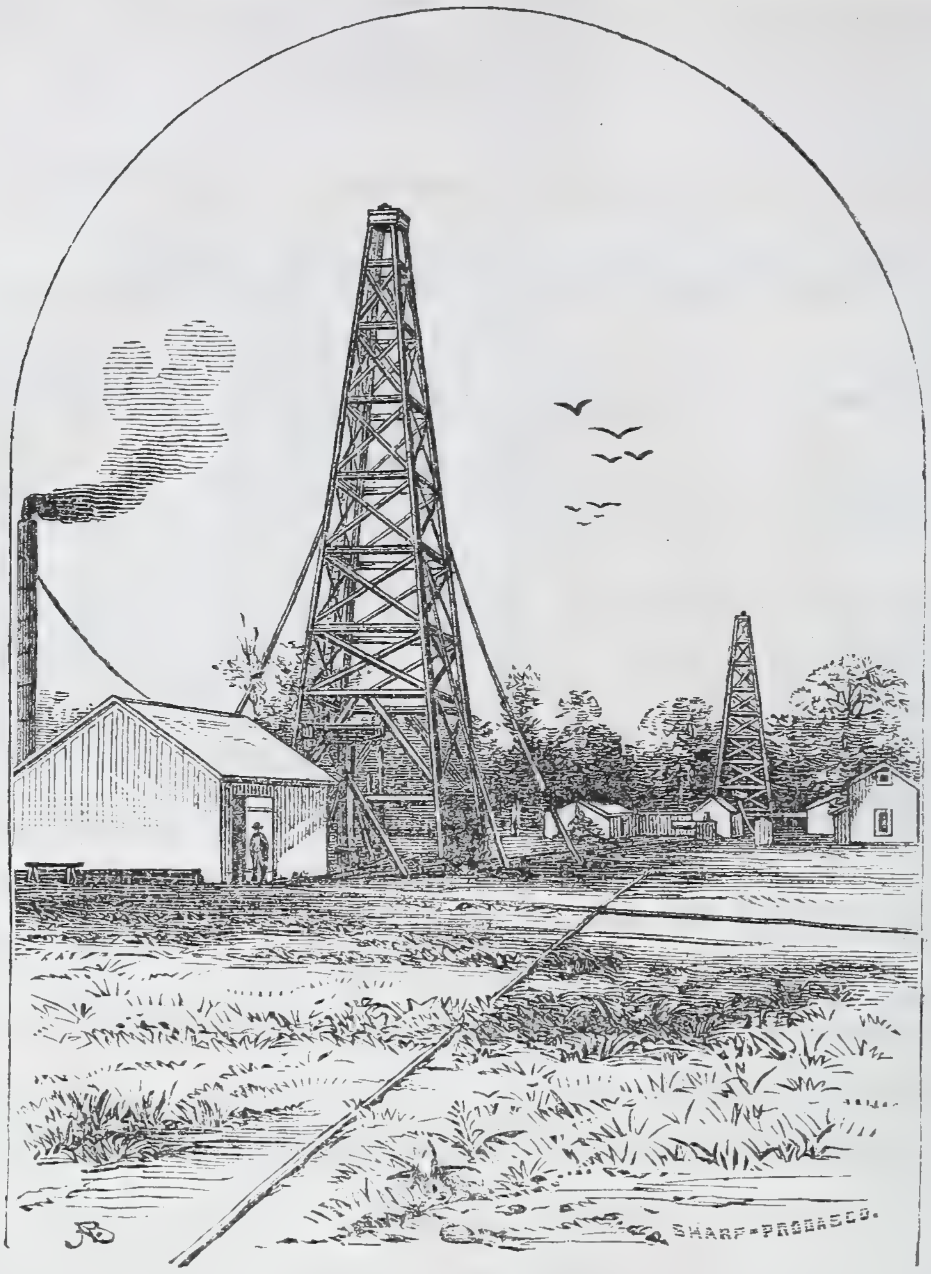
The amount of freight, specifying the quantity in tons:

Anthracite coal	2,992	Stone and lime	62,874
Bituminous coal	710,481	Agricultural products	31,445
Petroleum and other oils	850,467	Merchandise and manufactures	171,154
Pig iron	41,210	Live stock	1,057
Railroad iron	4,067	Lumber	78,119
Other iron or castings	19,693	Other articles	15,248
Iron and other ores	66,188		

The appearance of the country through which the road passes in many places is wild and picturesque. For thirty or forty miles up the Allegheny valley agriculture struggles hard to maintain a position, and as you farther advance it is almost entirely neglected. Petroleum and coal are masters of the situation. Some idea of the magnitude of the oil trade can be formed when it is known that the annual production will exceed eight million barrels of forty-two gallons each, or about 340,000,000 gallons.

A writer connected with the Galena Oil Works at Franklin thus expresses himself upon the importance of petroleum:

"Petroleum has become an important article of commerce, requiring hundreds of vessels to transport it to the most distant lands. Kerosene, its refined product, is generally known all over the civilized world. It has found its way to every part of Europe and the remotest portions of Asia. It shines on the Western prairie, burns in the homes of New England, and illumines miles of princely warehouses in the great cities of America. Everywhere is it to be met with in the Levant and the Orient, in the hovel of the Russian peasant and the harem of the Turkish pasha. It is the one article imported from the United States and sold in the bazaars of Bagdad, the 'City of the Thousand and One Nights.' It lights the dwellings, the temples and the mosques, amid the ruins of Babylon and Nineveh. It is the light of Abraham's birthplace, and of the hoary city of Damascus. It burns in the Grotto of the Nativity at Bethlehem, in the Church of the Holy Sepulchre at Jerusalem, on the Acropolis of Athens and the plains of Troy, and in cottage and palace along the banks of the Bosphorus, the Euphrates, the Tigris and the Golden Horn. It has penetrated China and Japan, invaded the fastnesses of Tartary, reached the wilds of Australia, and shed its radiance over many a dark African waste. Pennsylvania petroleum is the true cosmopolite, omnipresent and omnipotent in fulfilling its grand mission of enlightening the whole universe! Surely a product of nature that has become such a controlling influence in the affairs of men may well challenge universal attention to its origin, its history and its economic uses."


SHARP-PROBASCO.

The oil *derricks* are to be seen in every nook and corner, along the river, on the islands, by the side of the railroad, in the villages, towns and cities, beside the stores, churches, school houses, on the hillside and in the valleys. The river is covered with oil, it is in the air, every roof top and board is saturated with it. It pervades everything of material *matter* and even holds a sway over *mind.* Then there are hundreds of miles of pipe lines laid at every conceivable angle along the highways, along the railroad, under the rivers and streams, over and around the mountains, and across ravines, conveying the product of the oil wells. The appliances used in the business are seen all over that section of the country. In the early years of its discovery and development villages, towns and cities sprang into being with a rapidity unparalleled in the history of this or any other country. It exceeded the rapid growth of towns on the Pacific coast during the gold excitement, for it was nearer the great centres of trade and mechanical industry. Millions have been sunk and lost, and millions have been gained, and much has been written upon the subject; but no pen can adequately trace and describe the history in detail of the "oil regions" of Pennsylvania. Even numerals seem to lose their significance when used in conveying to the mind the magnitude of the oil trade in all its bearings. From the most reliable data at hand the following table is appended :

The following table shows the daily production of the Oil Region :

MONTHS.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.
January	10,192	12,634	15,477	16,268	20,407	37,653	24,489	22,975
February	9,967	11,917	14,391	17,012	21,725	29,836	23,208	23,065
March	9,891	12,385	13,457	15,506	21,461	24,629	23,874	23,167
April	11,067	12,974	13,308	16,308	21,384	25,958	22,502	23,383
May	10,153	14,165	13,987	18,345	25,044	25,121	22,468	23,721
June	11,334	14,817	14,806	17,749	26,448	30,725	23,207	24,120
July	11,697	15,969	17,261	18,513	27,893	33,337	25,437	24,633
August	12,157	17,777	18,161	18,816	30,198	30,049	23,186	25,533
September	12,645	19,489	17,048	16,561	31,809	28,021	23,206	26,020
October	13,071	20,159	17,092	14,300	30,403	29,669	23,583	26,102
November	13,317	18,012	17,672	16,068	33,045	28,702	23,340	26,216
December	12,844	15,214	17,724	20,825	34,980	27,400	23,254	25,580
Daily average	11,529	15,479	15,879	17,243	27,098	29,263	23,212	24,543

At this average per day the annual production would reach, as before stated, over eight million barrels of 42 gallons each.

From D. A. Stewart, Esq., President of the Columbia Oil Company, the following figures were obtained :

Amount of Oil exported from New York and other ports

Year.	Gallons.	Year.	Gallons.
1868	99,281,750	1872	151,823,207
1869	102,748,604	1873	236,899,223
1870	140,602,305	1874	235,143,151
1871	156,514,735	1875	232,839,457

The following table shows the number of barrels of crude petroleum received in Pittsburgh from all points, by river and rail, from January 1st to December 31st, for the past twelve years :

	Barrels.		Barrels.
1865	630,246	1871	1,146,493
1866	1,252,326	1872	1,186,501
1867	727,444	1873	2,035,182
1868	1,061,227	1874	1,595,377
1869	1,028,902	1875	1,115,301
1870	1,050,810	1876	1,684,577

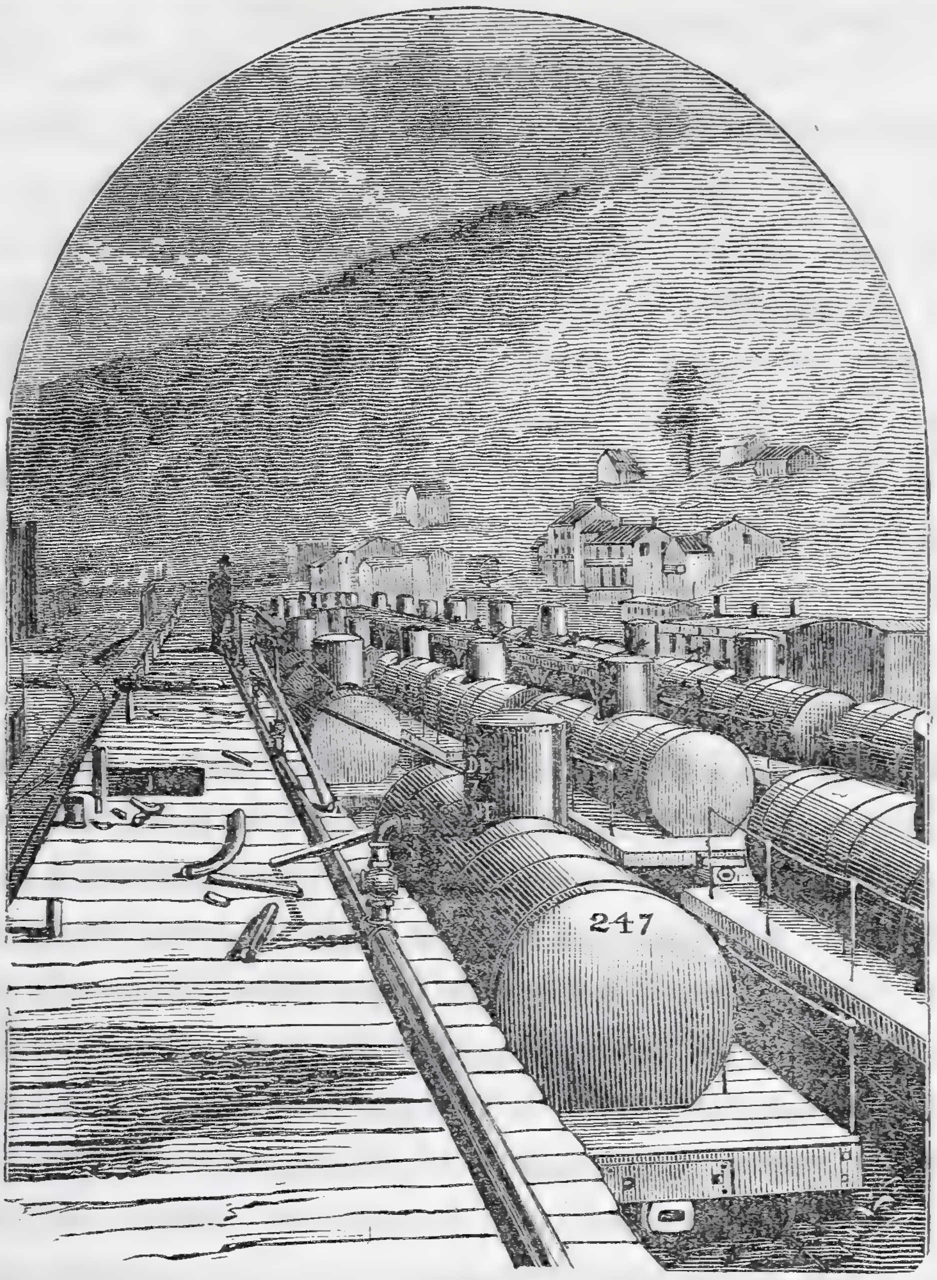
The following table shows the stock of oil in the oil region on the first day of each month :

MONTHS.	1870.	1871.	1872.	1873.	1874.	1875.	1876.
	Barrels.	Barrels.	Barrels.	Barrels.	Barrels.	Barrels.	Barrels.
Jan. 1st...	340,154	537,751	532,974	1,183,728	1,948,919	4,011,703	3,585,143
Feb. "...	342,390	587,021	579,793	1,266,373	2,283,032	4,546,188	3,734,835
March "...	351,474	642,944	662,407	1,244,657	2,528,219	4,592,364	3,829,250
April "...	328,609	673,810	877,832	1,178,643	2,623,534	4,537,833	3,900,703
May "...	328,309	685,616	950,803	1,192,541	2,503,246	4,552,672	3,989,904
June "...	351,568	554,424	1,010,302	1,324,493	2,701,625	4,502,896	3,791,642
July "...	321,840	541,676	990,229	1,433,620	2,794,790	4,386,720	3,326,726
Aug. "...	356,908	530,000	979,166	1,513,890	2,932,444	4,223,397	3,304,405
Sept. "...	419,477	541,000	951,410	1,521,185	2,758,504	3,812,945	2,930,456
Oct. "...	473,869	495,000	914,433	1,452,777	3,134,902	3,672,101	3,040,108
Nov. "...	576,014	503,547	759,630	1,493,875	3,449,845	3,701,235	3,030,735
Dec. "...	554,626	522,974	1,084,423	1,625,157	3,705,639	3,550,207	2,551,199

Elsewhere in this report will be found a table showing the number of barrels of petroleum transported through the pipe lines of the various companies of this State. That the reader may better understand the appliances used for this purpose, the following description is subjoined :

To properly appreciate the work of the oil pipe lines, a brief description will be of interest. The pipe used is wrought iron, lap welded, ordinarily, but two inches in diameter, and is put together with a screw sleeve joint.

The main pumping line or lines are run from the centre of production by the most direct route practicable to the railroad station selected as a delivery point. The pipe is usually laid on the surface of the ground, being covered only on road crossings, where it enters streams on river beds, and at other similar places where this protection from breakage may be thought necessary. At the railroad large iron receiving tanks are erected, varying from five to twenty thousand barrels capacity each. These tanks are located at a sufficient elevation above the railroad to permit their contents to be run by gravity through pipes to the loading racks that are located adjoining the railroad tracks. At the necessary intervals along the main lines of pipe pumping stations are established for the reception and forwarding of the oil. The equipment of these main stations consist of a pump-house, with two or more powerful pumps ; the necessary steam boiler capacity and boiler house ; two tanks of from five hundred to two thousand barrels capacity each, located in a substantial tank house ; a telegraph office ; and a building for the accommodation of the employees in charge. From each pipe line station, branch connecting lines lead off in every direction to the hundreds of different wells that are tributary to it. At each well, accurately gauged storage tanks are located, to which the pipe line branches are attached. Before commencing to draw oil from these tanks into the pipe lines, their contents are measured and recorded. Another measure and record is made after the pipe line ceases taking oil from them and the difference in inches between the two measures forms a basis of credit to the oil owner on the company's books.



A memorandum receipt, known as a gauger's ticket is given to the well owner or his representative at the time the oil is run into the pipe line and a negotiable certificate for all or any part of the oil credited to the well owner on the company's books is issued on call at the pipe company's central office or on telegraphic request. These gauger's tickets and certificates clearly set forth on their face the conditions on which petroleum is received and held for transportation by the company All petroleum received goes into a common stock from which deliveries are made in accordance with orders from the owners. Some of the physical difficulties surmounted have been remarkable.

On one line a single pump forces oil through a continuous string of two inch pipe a distance of sixteen and one quarter miles, overcoming on the way an elevation of four hundred and thirty feet. On another, fourteen miles in length, an elevation of nine hundred and sixty-eight feet is similarly overcome. The average capacity per twenty-four hours of a single main line of two inch pipe may be considered at about forty thousand gallons. A completely equipped private telegraph line forms a necessary appendage to each company's organization."

Arrived at Oil City, one hundred and thirty-two miles from Pittsburgh. As it is intended to leave the valley road at this point, it may be well to pause and give a brief history of it.

Public attention had long been directed to the importance of opening up and more perfectly developing the extensive bituminous and mineral regions and the vast tracts of valuable timber lands bordering the Allegheny river and its tributaries. The rude method and slow progress of transportation by water, and the uncertainty attending river navigation (a fact heretofore alluded to) gave the preference in the minds of practical men to the improved appliances for the carriage and handling goods—the speedy transit and clock-work regularity of the railroad system. The outcome of these views was the formation of the "Pittsburgh, Kittanning and Warren railroad company," which was incorporated April 4, 1837. The times, however, were not ripe for the undertaking, and it was found impracticable to raise the necessary funds for its prosecution. The enterprise slumbered till called into active existence in an amended form and with important additions. An interesting course of supplementary legislation marked the inception of the present line, and noted a favorable change in the auspices of the enterprise. In 1847 an extension of the charter was granted, and in 1851 a still further extension was approved. The latter and subsequent acts of Assembly conferred authority for extending the road to the New York State line for making connections with New York railways, and for constructing branch roads in the counties of Armstrong, Clarion, Jefferson, Venango, Elk, Forest, Clearfield, M'Kean and Potter. By special act of 1852 the corporate name was changed to "The Allegheny Valley Railroad." Letters patent were issued July 10, 1852. Soon afterwards the company organized, and Hon. William F. Johnston, who had just served a term as Governor of Pennsylvania, was chosen its president.

In 1853 the preliminary surveys having been made, the company contracted for the grading and bridging of the whole road from Pittsburgh to the New York line; but owing to financial embarrassment the company found it necessary to modify its plans. The first division of the road extending from Pittsburgh to Kittanning, forty-four miles, was opened for business January 30, 1856.

Between 1852 and 1857 elaborate surveys had been made with reference to the most eligible route for a great through line between Ohio and the eastern cities.

The work on the Mahoning extension had pretty well progressed, when the company altered its original intention, and made Oil City the terminus of the road. Subsequently surveys were made locating the line along the left bank of the river in accordance with this plan. Various causes operated to bring about this modification of the original design. The breaking out of the civil conflict had thrown serious obstacles in the way of the undertaking. Though generous subscriptions had been made by the city of Pittsburgh, the borough of Kittanning and the counties traversed by the mprovement, financial difficulties still continued to hamper the operations of the company. About this time the oil regions had risen into importance ; fabulous fortunes had been made in the oleaginous product ; population was flowing there, and towns springing up in a day. The oil Eldorado was the objective point of various railways then in construction. The managers of the Allegheny Valley railroad decided to open up the oil fields at the most advantageous point. The new route, it was believed, would tap some of the most promising portions of the oil belt, and subsequent developments have justified these views. In 1865 the Mahoning division was completed, and the objects for which the company had so long struggled were attained. Work on the Oil City extension was pushed forward under improved auspices, and in 1867 the whole line of one hundred and thirty-two miles was finished and opened for business. Shortly afterwards the road made connections with the Oil Creek and Allegheny River railway and subsequently with the Buffalo, Corry and Pittsburgh railroad which brought the system of lines to Brocton near Buffalo.

That part of the Allegheny Valley railroad lying between Pittsburgh and Oil City is known as the River Division. It has an average gradient of two feet per mile and easy curvature. Twelve miles of this distance is double track. The Low Grade Division was completed in 1874.

It begins at Red Bank, on the River Division, sixty-four miles from Pittsburgh and extends in a north-easterly direction one hundred and ten miles to Driftwood, on the west branch of the Susquehanna, connecting at that point with the Philadelphia and Erie railroad. The Low Grade Division traverses the valleys of Red Bank and Sandy Lick on the western slope of the Alleghenies, and of Bennett's Branch of the Susquehanna, on the eastern slope of the range cutting through the summit of the dividing ridge by a tunnel 1,965 feet long.

The grade east and west over this line is only at the rate of sixteen feet per mile.

The Low Grade Division is located in Clarion, Jefferson, Clearfield, Elk and Cameron counties in the north-western part of Pennsylvania.

Here occur the celebrated bituminous veins of extraordinary purity and freedom from sulphur. A superior coke is produced from this coal. Here too are found the famous beds of hematite and argillaceous ores, varying in richness from forty to fifty per cent. Forests of fine timber and valuable deposits of fire clay abound. Saw mills, mines and other works are in operation."*

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* The above facts were obtained from data furnished by the Allegheny Valley railroad company.

Between Pittsburgh and this point (Oil City) the stations are too numerous to speak of their characteristics in detail and therefore will proceed to mention only those most prominent either for their commercial and industrial interests.

After leaving the suburbs of Pittsburgh which may be said to extend up the valley for several miles the first place that attracts attention is Verona. Here are located the large and extensive shops of the Allegheny Valley railroad, giving employment to a large number of men, the statistics of which will be found elsewhere in this report. West Penn Junction. This station is located at the junction of the West Penn with the Allegheny Valley railroad, and the confluence of the Kiskiminetas and Allegheny rivers.

The West Penn road extends from Blairsville in Indiana county west to Butler in Butler county a distance of $57\frac{1}{10}$ miles thereby affording an outlet for the shipment of coal and oil.

Kittanning, the county seat of Armstrong county, is a thriving borough situated on the east bank of the Allegheny river, nearly midway between the Kiskiminetas and Red Bank, distant from Pittsburgh 44½ miles.

Red Bank Junction is the point from which diverges the Low Grade Division of the Allegheny Valley railroad, extending as heretofore stated to Driftwood, located on one of the tributaries of the west branch of the Susquehanna, one hundred and ten miles distant.

Brady's Bend, Clarion county, 68½ miles from Pittsburgh, is situated on the east bank of the Allegheny river. This is quite an industrial center. This is one of the towns that sprang suddenly into existence. In 1867–8 the town site was a farm. About that time building commenced on a large scale and a town soon stood forth as an evidence of the enterprise and push of the people. The completion of the Allegheny Valley railroad to and beyond it, the extensive rolling mill on the opposite side of the river, and the immense oil developments in Armstrong and Butler counties, assisted materially in advancing its business prosperity.

Parker City, distant from Pittsburgh 82½ miles is situated at the northern angle of Armstrong county, on the borders of Butler county on the one hand, and separated by the Allegheny river from Clarion county on the other, is the oil metropolis of the productive districts of Butler county and southern oil regions. This city has several times been destroyed by fire; but Phœnix like, it arose from its ashes. On the 10th of November, 1872, a fine iron bridge was constructed across the Allegheny river, costing about $100,000, and was opened for public traffic and is now utilized as a railroad bridge. The bridge joins Armstrong and Clarion counties and forms a connecting link between the Allegheny Valley railroad and Karns City railroad, which was opened to the public on the 10th day of April, 1874, thus connecting the Butler oil region with the Allegheny Valley railroad.

Foxburg, distant from Pittsburgh $85\frac{2}{10}$ miles, is situated on the line of the railroad, about three miles north of Parker's Station. It is the outlet of the Clarion. From here a large portion of the oil produced in the district is shipped through the Union and Atlantic pipe lines. The large storage and shipping tanks of this pipe company, the racks from which the tank cars on the railroad are filled, and for fifteen miles back in the country the roadside and fields are lined and dotted with rigs and wells, from the inception of "rig building" to the solid oil pumper that for four or five years has continued to yield night and day its wealth from the bowels of the earth.

Between this point and Franklin there are several quite important stations, among which are Emlenton and Scrubgrass.

Franklin, the county seat of Venango county, is situated at the confluence of French creek and Allegheny river. It contains a population of about 5,500 inhabitants.

Its industrial establishments are two merchant flouring mills, five refinerise for manufacturing lubricating and illuminating oils, one large brush factory and three or four establishments for the manufacture of "supplies" or tools for the operating and production of petroleum.

Oil City is one of the principal shipping points for the petroleum region. It is located at the junction of Oil creek with the Allegheny river. Aside from its connection with the oil interests it may be considered an important railroad centre, being the terminus and connecting point of several important railroads.

It is the northern terminus of the Allegheny Valley railroad, the Franklin division of the Atlantic and Great Western; the Jamestown and Franklin division of the Lake Shore and M. S. railway; the Oil City and Ridgeway railroad, and the Pittsburgh, Titusville and Buffalo railway form their connections at this point. Several of these roads have erected large machine, car and blacksmith shops for the repair of their motive power and rolling stock. All these roads have direct communication with the principal railroads of the country, in all directions.

Notwithstanding the many serious checks from fire and flood, the growth of the city has been steady, and it is one of the permanent and important commercial towns in the oil region. The amount of iron tankage at this point is estimated at nearly a million barrels. There are within the city limits a number of producing wells. Several large productive industries are carried on here, among which are the Oil City barrel works, the Imperial oil refinery, giving employment to a large number of men.

A large amount of business is done at the oil exchange in this city, and some very heavy transactions in the sale of oil is effected, and at times considerable excitement prevails at the meetings of the exchange. During the month of August when the price of oil began to show an upward tendency, the exchange was visited and some spirited and very boisterous scenes were witnessed.

Through the courtesy of W. H. Longwell, of the Oil City *Daily Derrick*, the following report of Henry E. Wrigley, upon the iron tankage of the oil region is subjoined, together with Mr. Longwell's remarks:

OUR IRON TANKAGE—FROM ACTUAL SURVEY—TOTAL NUMBER OF TANKS 484, WITH A CAPACITY OF 6,277,730 BARRELS—THEIR LOCATION, OWNERSHIP, ETC.

A short time since the insurance firm of F. Bates & Co., of Titusville, placed in the hands of Mr. Henry E. Wrigley a commission to make a complete survey and map of all the iron tankage in the oil region, with the view of a better comprehension of the relative value of risks in the insurance of oil. We think it no assumption to say that the information given by these statistics surpasses in importance to all oilmen anything heretofore published in the line of statistics connected with the oil business. The table will be found extremely useful in showing the ownership, pipe line connection, location, farm and capacity of each tank:

UNITED PIPE LINE.

Owner.	Location.	Farm.	Capacity.
Abrams	Brady's Bend		10,000
Do.	do		9,221
Brough & Bonham	do		16,000
Bates & Mawhinney	do		13,500
Citizens	do		3,339
Jennings	do		12,000
Munhall	do		12,500
Neyhart	do		17,500
United No. 1	do		9,800
Do No. 2	do		5,000
Do No. 3	do		8,000
Clintonville Station	Clintonville		5,500
Brawley	Karns City		15,000
Gracie	do		18,000
M'Clymonds	do		20,800
Moorhead Station No. 1	do		1,300
Do 2	do		2,000
Mattison & M'Donald	do		23,000
M'Cafferty	do		22,000
Story	do		24,000
H. L. Taylor & Co. No. 1	do		24,500
Do 2	do		25,000
Tack & Moorehead	do		18,000

Owner.	Location.	Farm.	Capacity.
Bradley No. 1	Millerstown	F. & M.	20,000
Do 2	do	do	20,000
Frederick	do	Frederick	23,000
Greenville	do	Hemphill	19,000
Harley	do	Frederick	20,000
Kimberley	do	F. & M.	19,500
M'Allister	do	M'Allister	22,500
Porter	do	Hemphill	15,000
Selden	do	do	22,000
Bushnell	Monterey	Logan	20,000
Harrington	do	do	1,800
Hutchison & Batch	do	do	20,500
Macomber	do	do	24,000
South & Dower	do	do	13,000
New Hope No. 1	New Hope	New Hope	15,000
Do 2	do	do	15,000
North Washington No. 1,	North Wash	North Wash	5,500
Do 2	do	do	5,500
Argyle Station No. 1	Petrolia		1,100
Do 2	do		1,100
Campbell	do		20,000
Hazelwood	do		20,000
Harrington	do		11,000
Perdue	do		14,500
Wilson	do		22,000
Brownson	do	Sheakley	10,000
Emerson	Raymilton	R. Brs	20,000
Gordon	do	do	19,000
Hays No. 1	do	do	8,800
Do 2	do	do	13,000
Hasson No. 1	do	do	20,500
Do 2	do	do	20,500
Huntingdon	do	do	9,600
M'Elroy & Boulton	do	do	20,000
M'Calmont	do	do	9,000
Macomber	do	do	20,000
Neyhart No. 1	do	do	17,000
Do 2	do	do	16,000
Porter No. 1	do	do	11,000
Do 2	do	do	19,000

Owner.	Location.	Farm.	Capacity.
Portland Oil Co	Raymilton	R. Brs.	23,000
Sheasley	do	do	9,000
United Tank	do	do	21,500
Columbia	Troutman	Sutton	11,000
Bostwick	do	Troutman	23,000
Cochran	do	do	14,500
Cleveland	do	Starr	23,500
Gracie	do	do	20,000
Galey	do	Troutman	20,000
Hasson, or Mawh. & B	do	do	19,000
Smith	do	do	16,000
Thompson, W. W	do	Morrow	16,000
Do....Thomas	do	do	19,500
Vandergrift & Forman	do	Troutman	23,000
Jennings, *Petrolia			25,000
Total			1,225,360

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* Burnt since survey.

UNION PIPE LINE.

Union No. 16, Argyle	15,372
Mead Brothers...do	5,477
Union No. 14, Butler, M'Candless	9,468
C. N. Payne, 1..do........do	12,009
Irwin, Ralston & Hartley, Butler	21,089
Nelson Farrel, Bear Creek Rack	10,486
Union No. 13, Bear Creek Bridge	4,936
Thos. Hackett, Bear Creek Rack	5,503
Kepple, Farren & Co., Bear Creek Rack	22,100
Union No. 1, Clarion Station	9,197
Do....2.......do	9,096
Do....10.......Dilks	11,627
Fertig & Lane......do	23,986
Perrin & Pratt.....do	12,438
Melville Oil Co......do	18,717
J. C. Mead & Co....do	24,093
M. Brownson & Co..do	20,579
Union No. 31.......do	24,763
M. Brownson.......do	22,714
Do..........do	19,856
R. Jennings........do	24,064

Union No. 35, Clarion Station	19,856
Do 36 do	19,898
Do 37 do	21,171
Harrington Bros do	24,000
Munhall & Co do	21,364
J. L. Grandin, Farrentown	17,478
Parker T. & Co do	15,353
Do do	22,104
Nesbitt, Golden & Brown, Farrentown	12,084
Parker T. & Co do	24,003
Wm. Parker do	23,036
Parker T. & Co do	23,007
Mead & Fouche do	21,360
Warden, Frew & Co do	25,112
Bernheime do	24,074
Union No. 3, Foxburg	3,285
Warden, Frew & Co., Foxburg	17,030
Warden & Oxnaed do	9,738
Brough & Bonham do	14,096
W. C. Andrews do	13,800
A. S. Palmer & Co do	13,110
Brough & Bonham do	14,096
Joel Fink do	10,193
Fink & Vensel do	5,926
Fox estate do	13,145
A. S. Palmer & Co do	13,110
Union No. 8, Parker Rack	13,166
Warden, Frew & Co. do	9,739
J. C. Mead do	5,522
Warden, Frew & Co do	21,110
Jas. E. Brown do	21,797
Wm. Hartley do	22,224
Total Union	862,557

COLUMBIA CONDUIT COMPANY.

Columbia Conduit T. Cramer S. Cramer	16,000
Benson R., Dilks, Keysler	24,000
Benson, G do do	23,000
Hays do Fallow	22,000
D. Hostetter, Fairview, Hostetter	6,421
Do do do	12,733

Columbia C't Co. T., Millerstown, T. & B.	12,000
Waring...do...Conway	24,175
Waring & M'Clintock...do...do	24,000
Miller...do...do	24,215
How & Hackett...do...Hemphill	22,720
Fertig...do...do	13,000
Fertig...do...do	13,000
Columbia C't T'k, Montrose, Co. property	23,597
Do...do...do	23,304
Do...do...do	23,456
Do...do...do	23,589
Do...do...do	6,116
Wiser...do...do	24,000
Holdship & Irwin, Pittsburgh, A'n refinery	22,000
Do...do...do	22,000
Do...do...do	24,000
Hazlewood, Petrolia, Blanney	7,000
Patton or Nesbit, Petrolia, Patton	22,000
Karns, S. D., Karns City, M'Clymond	24,000
Emerson & Co...do...Nolan	24,000
Stoughton...do...J. Moore	24,000
Total Columbia Conduit Co.	530,323

GRANT PIPE LINE.

Grant Pipe Co., Tank 4, Parker, Anchors	12,097
Chalf't, Robs'n & Co...do...do	21,122
Wm. Thompson...do...do	21,960
Parker & Cooper Bros...do...do	21,970
Wilson Farm Oil Co...do...do	21,985
D. J. Chapman...do...do	22,023
Euresco & Oil Co...do...do	21,263
Grandin & Neyhart...do...do	21,509
M'Kinney Bros. & Galey...do...do	21,238
N. H. Harkness...do...do	12,177
Ralph Dawson, Farrentown, Farren	16,113
Parker, Leonard & Co...do...Leonard	24,294
Morgan, Cooper & Co...do...do	24,290
F. A. Stahl...do...P. & B	10,071
Porterfield & Treat, Parker, Kelley	16,407
Roberts & Hartley...do...do	21,043
A. P. Tanner...do...do	10,189
Nesbitt & Co., burned...do...do	21,702

Goldsb'gh, Cook & Co.	Parker	Kelley	21,334
Einstein & Dull	do.	do	22,033
Robinson & Grant	do	Robinson	10,121
Wm. Reed	Karns City	Story	21,720
Total			416,650

PENNSYLVANIA TRANSPORTATION COMPANY.

Fertig	Brady's Bend	25,416
Hammond	do	25,275
Harrington	do	25,470
Penn'a Trans. Co.	do	9,500
Do	do	21,425
Do	do	26,442
Do	do	26,000
Wyatt, Tank 1	do	14,620
Do ...2	do	23,115
Penn'a Trans. Co. tank	Gregg	5,000
Bennett	Miller	10,000
W. C. Andrew	do	15,000
Wilkinson, Carter & Co	do	10,000
Berry & Co	Fagundus	10,000
Johnson & Co	Miller	13,000
Do	do	13,000
Penn'a Trans. Co. tank	Pithole	10,000
Johnson & Co	Shamburg	4,500
Penn'a Trans. Co. tank	Shaffer	20,000
Chase	Titusville	12,000
Penn'a Trans. Co. tank	Trunkeyville	12,000
Do	do	12,000
Beatty & Co	West Hickory	18,000
Thayer & Roddel	Miller	11,500
Kidder & Vaughan	do	2,850
Do	do	2,850
Dudley & Co	do	1,052
Neyhart & Grandin	do	11,000
Spear, Gregory & Co	do	11,000
Penn'a Trans. Co.	Titusville	10,000
Beaty & Co	do	23,200
Lamman Chase	do	15,575
L. M. Mitchell, est.	Shamburg	1,700
Total Penn. Trans. Co.		452,489

KARNS PIPE LINE.

Kemp, Patterson & Co., Farrentown F	22,264
S. D. Karns, No. 1 do F	15,780
Do 2 do F	24,906
Do 3 do F	24,964
William Munhall, Parker, Kelley	18,896
Nesbitt & Co., No. 3 do Anchors	21,818
Munhall & Jackson do do	18,901
Grandin & Neyhart do do	21,510
E. Taber do Kelley	23,794
Total	192,833

COLUMBIA FARM OIL COMPANY.

Baroraft & Boulton, Columbia Farm	1,200
John Brough do	5,000
Columbia Oil Co do	2,800
Do do	10,000
Do do	10,000
Do do	2,800
Total	31,800

TITUSVILLE PIPE LINE.

Robert Foggin, Shamburg Nat. Oil Co	4,737
N. Y. & P. Oil Co do N. Y. & P. Oil Co	1,000
Titusville Pipe Co do National Oil Co	1,443
Do do	1,443
Do do	1,451
Do do	1,452
Do Titusville	5,000
Do do	5,000
S. D. Benson, Colorado	20,000
Total	41,526
Dr. Halderman, Espy, Funk	800

CENTRAL TRANSPORTATION COMPANY.

Central Transportation, Petroleum Centre	10,000
Do do do	10,000
Do do do	10,000
James M'Cray do	15,000
Total	45,000

MILTON AND SANDY PIPE LINE.

Grandin & Neyhart, South Oil City	22,000
George V. Forman......do	14,000
Vandergrift & Forman.....do	10,000
Lockhart & Frew, No. 1...do	2,000
Do......No. 2...do	2,000
Milton & Sandy, Siverleyville	6,000
Total	56,000

OIL CITY PIPE.

Oil City No. 1, South Oil City	22,000
Do..No. 1......do	22,000
Bradley & Co., No. 3, do	23,000
Bradley & Chambers, do	10,500
Mitchell...........do	11,500
Bradley & Jones....do	24,000
Total	113,000

ANTWERP PIPE LINE.

Antwerp & Co., Fullerton	10,400
Pioneer Oil Co......do	11,300
J. W. Irwin........do	11,700
H. S. Suthard ......do	15,000
Patterson & Dickey .do	13,600
Wm. Hartley & Co..do	21,000
Oil City tank, Beaver Station	16,000
Antwerp tank, Edenburg	11,900
Do...Glen Station	5,700
Total	116,600

NEW YORK AND ALLEGHENY.

E. H. Hidden, Millers, Miller	5,600
Neyhart estate, Tidioute, N. Y. & A. Co	6,000
Cummings & Co...do..........do	5,951
N. Y. & A. Co.'s tank, Titusville..do	6,198
Do......Dennis Run, Bushnell	6,163
Total	29,102

TIDIOUTE PIPE COMPANY.

Neyhart & Grandin, Gordon Run	12,000
Tidioute & Warren Co.'s tank, Gordon Run	12,000
Tidioute Co's tank ... do	12,000
Do. . Dennis Run	12,000
Tidioute & W. Co.'s t'k, Dennis Run	5,000
Grandin, Tidioute creek	6,000
Total	59,000

OLEAN PIPE.

Olean Co.'s tank, near Bradford	22,000

OCTAVE PIPE.

Octave Oil Co., Titusville	13,000
Standard ... do	1,000
R. H. Lee ... do ... Lee refinery	3,500
Total	17,500

CHURCH RUN PIPE.

Church R. Co's. tank, Titusville, on creek	5,000

AMERICAN TRANSPORTATION COMPANY.

American Trans., Turkey Run, Keating	6,470
Do ... Turkey City, Panton	23,283
Do ... do ... do	23,277
Do ... Emlenton, Am. Tr. Co	4,864
Do ... do ... do	15,509
Do ... Oil City, Fisher's Landing	11,666
Do ... do ... Moran	23,046
Do ... South Oil City	22,000
Total	130,015

ROCHESTER AND OLEOPOLIS.

Otto Gerner, Pithole Creek, Rooker	10,000
A. S. Prather, Oleopolis Co. land	12,000
Rochester & O ... do ... do	12,000
Do ... do ... do	15,000
Do ... do ... do	15,000
Do ... Oil City along R. R	8,000
Do ... do ... do	6,000
Total	78,000

NEW YORK PIPE COMPANY.

W. C. Adrews, Titusville, R. R. Mackey	25,000
N. Y. P. Co. tank....do....Bonar	20,000
Do..........do.....do	10,000
Do..........do.....do	5,000
Do..........do.....do	5,000
Total	65,000

ATLANTIC PIPE COMPANY.

Weller, Foxburg, Pandon	14,000
Atlantic tank, Foxburg, Fox	10,593
Do.....Beaver Creek, Jefferson	25,500
Do.....Canoe Creek, M'Elhatten	10,266
Do.....Sligo, Lyon, Short & Co	25,440
Do......do....do......do	25,392
Total	111,191

KEYSTONE PIPE COMPANY.

Keystone, No. 1, near Freeport	6,037
Do.....2......do	6,647
J. Overy, St. Joe, Murphy	24,000
Total	36,684
Producers C. L. & P. Co., Bradford	22,000

PRIVATE TANKAGE.

Beatty, Neyhart & Grandin, Titusville	
Acme Oil Co., Titusville, E. H. Chase	23,200
Do........do........do	2,189
Do........do........do	22,851
Do........do........do	9,451
Do........do........do	5,000
Name not given..do........do	3,000
Pickering & Chambers, Titusville, E. H. C	4,000
M. N. Allen, Titusville, north side creek	5,000
Name not given, Titusville	5,000
R. D. Fletcher......do....Fletcher	10,000
Ames & Severence..do... Ames & S	7,000
Jno. Watson.......do....J. Watson	10,200
Boon & Benedict, Gregg, Gregg	13,000
Jas. M'Cray........do...Funk	12,000
Do ....do ...do	22,000

D. M'Bride, Gregg, Gregg	3,000
Jas. Fannor do do	7,000
Fertig & Hammond, do Boyd	3,000
Do do do	3,000
Miller & Dickey do do	5,222
Peter Hines do do	2,700
Cary Oil Co do do	4,000
Jacob Ritter do do	3,600
Parker, Thompson & Co., Oil City	10,000
Do do	6,000
Do do	12,000
Lockhart & Frew do	9,500
Fleming do	16,000
Capt. Kuntz do	5,500
Do do	5,500
Do do	5,500
John Munhall do	21,500
Do do	8,000
Do do	500
Do do	9,000
Hannah, Chapin & Co do	12,000
Mawhinney Bros do	10,000
Do do	6,000
Cochran do	5,500
Do do	6,000
Roess do	7,500
Hasson, Cromwell & Co do	15,000
Do do	15,000
Do do ,	5,500
Economy, Oil City, Economy Refinery	11,300
S. P. M'Calmont, South Oil City	5,000
Lamberton do	10,000
Roess Bros do	2,000
John Munhall do	2,000
Grandin & Co , South Oil City	19,000
J. S. M'Cray do	13,000
Harrington, burnt	20,000
M'Grew, burnt	20,000
Imperial Refinery, Siverlyville	11,666
Do do	13,204
Do do	5,402
Do do	8,100
Do do	14,484
Do do	14,480

G. P. Smith, Franklin, G. P. Smith	12,000
Do do do	20,000
Do do do	10,000
Do do do	5,500
M'Calmont do	2,500
Emerald Oil Co do Emerald Oil Co	6,000
Taft & Payne do Taft & Payne	12,685
Do do do	11,500
Do do do	9,000
Galena Oil Co do Galena Oil Co	3,000
Do do do	5,000
Do do do	15,000
Spencer do Spencer	5,000
Colonel James do James	6,000
H. R. M'Clintock, Shaw's Landing, J. Council	750
Do do do	750
Reno Oil Co., Reno, Reno	5,000
Do do do	22,000
Do do do	17,000
M'Calmont, opposite Reno, M'Calmont	6,000
Hunter & Cummings, Brady's Bend	25,409
Do do	25,450
Graham Oil Co., Parker, Graham tract	5,200
J. E. Brown do	3,350
Fox & Fink, Clarion Siding, Fox	6,000
Smith & Son, Foxburg do	6,000
Mrs. Fox do do	13,100
Warden & Oxford do do	9,738
Brough & Bonham do do	14,096
A. S. Palmer & Co do do	13,110
Fink Veusel do do	6,000
Fox & Fink do do	10,000
W. C. Andrews do Pandou	13,800
Warden, Frew & Co do do	17,030
B. F. Brown, opposite Foxburg, Fox	6,000
F. Prentice & Co., Foster, Prentice	15,000
Do do do	6,000
Do do do	3,000
Lewis, Bon'll & Co do do	6,000
Finley do do	3,000
Dr. Hold'n & other do Foster Oil Co	3,000
Hunter & Cummings, Cresswell City	3,000

John M'Kay, Jenkins' farm	18,000
A. D. Miller, Manchester	10,000
Do do	8,000
Do do	3,500
Wamsen & Meyers, 23d st., Pittsburgh	4,000
Do do	8,000
John Spear, 38th and 39th sts do	1,500
David Bly, 41st st do	2,500
W. P. Logan, 43d st. bridge do	4,500
Elkins & Flack, 43d st. bridge do	3,799
Eagle Refinery, 47th st. do	3,500
E. J. Waring, 47th st do	9,867
Liberty, 48th st do	5,000
Standard, 55th st do	.....
Do 55th st do	.....
Clark, 55th st do	5,000
Seely, 55th st do	20,000
Dilworth, 55th st do	12,789
Holdship & Irwin, Sharpsburg	22,000
Do do	23,000
Do do	25,000
Do do	5,424
Brush & Lyons do	8,346
Do do	3,000
M'Kelvey & M'Mahon do	559
Do do	10,000
Livingston Bros., Pittsburgh, Crystal Refinery	9,683
Do do do	5,142
Lockhart & Frew, Brilliant, Brilliant Refinery	8,999
Do do do	43,000
R. R. Waring, Vesta, Cosmo and Vesta Refinery	13,081
Do do do	9,594
Do do do	9,894
Do do do	19,000
Do do do	9,000
Do do do	14,000
Do do do	12,000
Phillips do do	7,000
P. Weisenberger, Fairview, Keystone	3,704
D. Hostetter do Fairview	445
Do do do	12,000
Do do do	15,000

Model Refinery, Butler j'n, Model Refinery	10,000
Do ... do ... do	9,000
H. S. A. Stewart, Aladdin, Penn	10,000
Do ... do ... do	8,500
Standard, Aladdin, Aladdin	576
King, Goodwin & Co., Manorville, Man'e	4,000
Do ... do ... do	1,600
J. Bunnell, Rouseville, J. W. M'Clintock	5,500
H. Camp ... do ... A. Buchanan	5,000
Armstrong & Hathaway, Rouseville, A. B	3,500
Economy Oil Co ... do ... do	3,000
A. Willoughby ... do ... do	1,000
Strong & Gibson ... do ... J. Buchanan	5,500
F. W. Mitchell ... do ... do	5,000
W. S. M'Mullen ... do ... M'Clintock	5,000
C. E. Main ... do ... do	4,500
Cornen & Beers ... do ... C. & B	10,000
Wm. Kountz, Enterprise, Moron	7,000
Shamburg Petroleum Company, Shamburg	4,500
Standard Company, Titusville, Company's Lands	6,000

UNION BURNT TANKS AT BEAR CREEK ROCK.

Union tank, Bear Creek Rock
Neyhart & Grandin ... do
Brown & Crawford ... do

NOTE.

There are eleven tanks at Sarah Furnace, connected with the Relief pipe line, but parties on the ground would give no information, nor would they permit any measurements to be taken. The capacity of these tanks, however, which appear in due order in the map, amount to 205,476 barrels, and are included in the total tankages.

The Oil Creek and Allegheny River railroad continues up the Allegheny river from Oil City, passing through Forest county and the Tidioute Oil district to Warren, and there forming important connections east, west and north.

It is regretted that a visit could not have been made in this direction. We learn, however, that Tionesta and Tidioute are towns of considerable importance; the former being the county seat of Forest county, and the latter, Tidioute, being pleasantly located on the north bank of the Allegheny river, thirty-five miles in a north-easterly direction from Oil City. It is well laid out, and has a complete system of water works, with fine schools, churches and several banking institutions, together with all the requisites necessary for a flourishing town. It grew up suddenly during the early oil excitement, and maintains a prominent position among the towns and cities in the eight counties comprising the oil belt of Pennsylvania.

After spending several days in gathering statistics of various kinds at Oil City, we visited the oil districts of M'Clintock's, Rouseville, Rynd Farm, Columbia, Petroleum Centre, Pioneer, Miller Farm and Boughton, arriving at Titusville, seventeen miles distant from Oil City. Along the route between these points was everywhere seen evidences of the oil trade.

Some districts were abandoned and deserted, while others were in active operation. The country began to show more signs of agricultural thrift and prosperity. The county of Crawford recently has taken a high position in her dairy products, which uniformly find ready sale in the vicinity.

Titusville is situated in the south-eastern portion of Crawford county, and her population is estimated at about ten thousand. It is a beautiful city, regularly laid out and pleasantly located near the junction of Pine and Oil creeks. The city is well supplied with all the modern appliances, gas, water works, an opera house and several well conducted newspapers, etc. Several very large industrial establishments are located there, and a large amount of capital is invested and several hundred men are employed. Prominent among these enterprises are the works of the Titusville Manufacturing Company, engaged in the manufacture of engines, boilers, tanks and other appliances used in the oil regions. The establishment of Gibbs, Sterrett & Co., is engaged in a similar enterprise. There are also a number of barrel manufactories, the largest of which is capable of turning out from 1,500 to 1,800 per day. A large amount of natural gas is used for heating and cooking purposes; one whole street is supplied with this cheap and convenient fuel. At Titusville the oil business can be studied in all of its various branches.

We are under many obligations to Hon. W. C. Plummer and Messrs. M. N. Allen and Henry E. Wrigley, for valuable assistance and information.

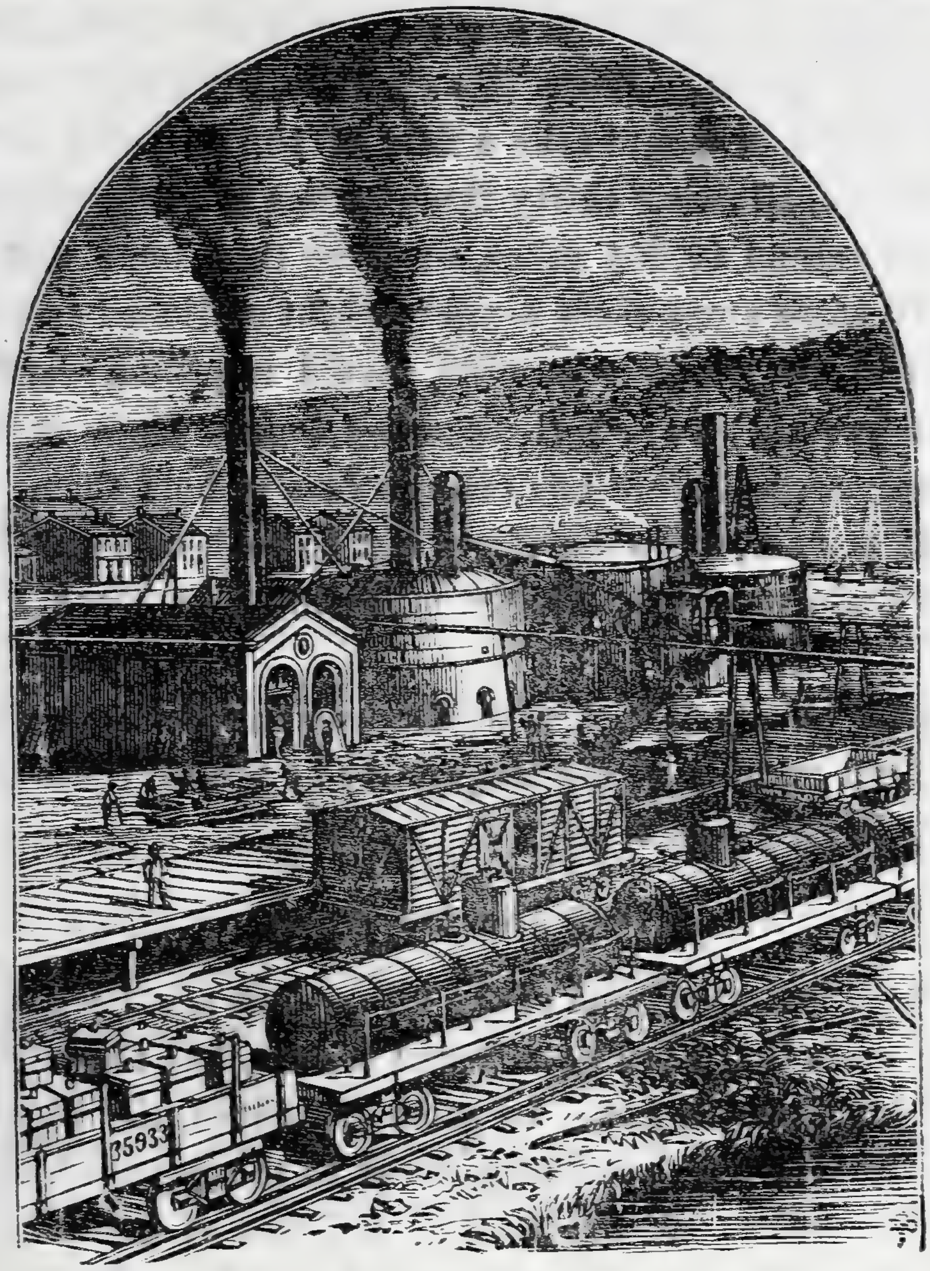
The following statement is claimed by those most competent to judge, and who have the most accurate data at hand, to be substantially correct:

The amount produced since 1859, when the Drake well was first sunk, down to May 1, 1876, is 78,945,684 barrels of 42 gallons each, or 3,315,718,728 gallons. It is estimated that the quantity just enumerated would fill a canal fourteen hundred miles long ten feet wide and six feet deep, or make a lake nearly two miles square and six feet deep. The value of entire product, taking the average of the past twelve years at $3 80 per barrel as a basis, would equal in round numbers $300,000,000 at the wells.

Taking the average price of crude oil at the wells, during the past thirteen years, which is $3 65 per barrel, the value of the export trade, since 1868, is $173,716,844$\frac{85}{100}$. This does not include the cost of transportation which is about $1 50 per barrel from the oil regions to the sea board.

TRANSPORTATION PIPE LINES.

These silent agents accomplish what in early years of the trade was done by teamsters, or a stream full of crashing barges. The first pipe was laid in 1864, and was unsuccessful by reason of leakage, and was of cast iron four inches in diameter, and some five miles long. Wrought iron pipe was first laid between Petroleum Centre, and Miller Farm, and Titusville, 10 miles, early in 1866. This line was the pioneer of what is now a vast net work—a labyrinth of iron tubes. The total mileage of pipes now in use can scarcely be estimated—good authority giving the quantity at 4,000 or 5,000 miles. This large quantity of pipe is owned by private individuals and by corporations. There are thirty-five pipe lines now in operation who make quarterly reports to this Bureau. The pipe lines have their origin at the producing wells—their terminus at the immense tanks that are seen along the Allegheny Valley railroad. At 35 cents per foot, the capital invested in pipes alone, taking the entire quantity at 4,000 miles, is $7,392,000. The Conduit pipe line company have a main line of 48 miles, extending from Butler county to Pittsburgh, of three-inch wrought pipe, and seventy miles two-inch connections, with wells throughout the district tapped by the line.



The construction of oil tanks has given birth to a new industry, great quantities of sheet-iron and rivets being used in their construction.

It has already been shown that the total of oil produced in the Pennsylvania regions since the first well was struck, is in round numbers seventy-eight millions of barrels. Were this oil barreled and the barrels laid in a square side by side, it would take a field of 10,260 acres to hold them, or were these barrels, allowing thirty-three inches to each, placed end to end, the row would extend 40,264 miles, or more than once and a-half around the globe. To store away these seventy-eight millions barrels in a pile ten barrels high and twelve barrels wide, would require a warehouse no less than one hundred and twenty-three miles long. Or were these seventy-eight millions barrels loaded into enough cars to hold them, would require at fifty barrels per car, allowing thirty feet to each car, a train of 1,560,000 cars, and the train would be 13,000 miles long, or reach half way round the globe.

Let the reader calmly reflect upon the comparative statements, and perhaps he can form an idea of the magnitude of the oil trade of western and north-western Pennsylvania.

GAS AND GAS WELLS.

Probably the greatest marvel of the oil regions are the gas wells. These are generally wells that have been bored for oil, but the tools encountered reservoirs of inflammable gas. In some instances, the pressure of the escaping gas indicates five hundred pounds to the square inch, and its roar can be heard for miles. Millions upon millions of cubic feet of the most perfect fuel is escaping into the air every hour of the day and night. This gas is in universal use for furnishing fuel and light in the regions, but a fraction of it only can be utilized. A pipe twelve inches in diameter will soon furnish the iron and glass industries of Pittsburgh with fuel from Butler county gas wells, and such a line is already in operation on a small scale.

The distance from Titusville to Corry, in Erie county, is twenty-eight miles, *via* the Oil Creek and Allegheny River railroad.

Corry is also quite an important railroad point. The Atlantic and Great Western, Philadelphia and Erie, and Oil Creek and Allegheny River railroads pass through it. This town is situated on the northern limits of the oil belt, and is well situated commercially. New wells are being sunk here with sanguine hopes of success.

There is a large oil refinery here, conducted by T. A. Allen, Esq., to whom we are indebted for statistical information. From this point to Erie, a distance of thirty-seven miles, the country is well adapted to agricultural pursuits, and along the line of the Philadelphia and Erie railroad may be seen some splendid farming lands.

Erie is a city containing about 20,000 inhabitants. In point of location it is one of the most beautiful and desirable in the western or north-western portion of Pennsylvania. Being located upon a plateau sixty or seventy feet above Lake Erie, it commands a pleasant view for many miles up and down the harbor. Its commercial facilities on the lake and railroad connections are important. The harbor of Erie is one of the best on the northern lakes, being well supplied with light houses, docks, elevators, etc. It has (erected by the U. S. Government) three light houses, one on the mainland near the eastern end of the harbor, one at the channel or entrance from Presque Isle bay, and the third on the north side of the peninsula. The harbor is nearly five miles in length by one in width, the peninsula or Presque Isle, so to speak, starting from the mainland at the west end, and running out into the lake about a mile, and then running parallel with the main shore in an easterly direction four or five miles.

The bay affords a great fishing ground. Great quantities of Mackinaw trout, white fish, black bass and other fish are annually caught and prepared for market.

The Philadelphia and Erie and the Pittsburgh and Erie railroads have branches extending to their docks at the harbor.

Leaving Erie, *via* the Philadelphia and Erie railroad, we return to Harrisburg through a section of the northern tier of counties, in a south-easterly direction through the counties of Elk, Cameron, Clinton, Lycoming, Northumberland and Dauphin to Harrisburg. From Erie we commence gradually to ascend towards the western slope of the Allegheny mountain.

At Warren, sixty-eight miles south-east from Erie, we strike the Allegheny river. This is quite an important point for the intersection of railroads. The Philadelphia and Erie, the Dunkirk, Allegheny Valley and Pittsburgh, and the Oil Creek and Allegheny River railroads passes through it. The town is in the oil belt, and is influenced to a considerable degree by the oil operations. New oil territory is being explored with sanguine hopes of success.

Warren contains a population of about twenty-five hundred inhabitants. Several industrial establishments are located here, requiring the investment of considerable capital, and giving employment to quite a large number of workmen.

Near Warren you leave the valley made by the Allegheny river, and commence quite a rapid ascent of the western slope of the Allegheny mountains. Your course is through a new and undeveloped country. Heavy forests of pine and hemlock are seen along the line, and many of the inhabitants are engaged in the business of lumbering. This section of the State affords fine facilities for the establishment of tanneries, many of them now being in successful operation. Up the mountain side you glide, leaving the oil belt and entering the measures of bituminous coal. At Kane, distant thirty miles from Warren, you are on the summit of the northern range of the Allegheny mountains at about the same altitude as Gallitzen on the Pennsylvania railroad, and about seventy-five miles in an air line north of it. It is a new town in M'Kean county that has grown up since the completion of the Philadelphia and Erie railroad. It was founded by Gen. Thomas L. Kane in the wilderness, and is now quite an industrial centre for the manufacture of lumber.

From Kane you commence to descend towards the valley of the west branch of the Susquehanna, down across the counties of Elk and Cameron. The country through which the railroad passes is new, and in many places the primeval forests along the line are unbroken. The business of the inhabitants is almost exclusively devoted to lumbering and tanning of leather, with some mining of bituminous coal and farming.

At Wilcox is located one of the largest tanneries in the United States. During the year 1875–6 it employed in tanning 210 men for the entire year, beside giving employment to 200 bark peelers for four months. The company produced 4,000,000 lbs. of sole leather, valued at $1,000,000. They consumed 22,000 cords of hemlock bark, valued at $110,000; tanned 5,500 domestic hides, valued at $30,000; foreign hides tanned, 100,000, value, $550,000.

The statistics in relation to the manufacture of lumber and coal mined along the line of the Philadelphia and Erie, in these counties, will be found elsewhere in this report.

Ridgway, the county seat of Elk county, is a new and neat little town of recent origin. Here also the people are largely engaged in lumbering and tanning. The tannery of W. H. Osterhout does a large and extensive business. Production of sole leather annually, 2,500,000 lbs., valued at $600,000; number of persons employed in tanning about eighty; number of cords of bark annually used 12,000, valued at $54,000.

Domestic hides tanned (California)	30,000
Foreign...do....do...(Buenos Ayres)	40,000
Total foreign and domestic	70,000
Value of same	$350,000

This tannery produces sole leather exclusively. There is considerable business done in mining bituminous coal in Elk county, the largest colliery now in operation being at St. Marys, on the line of the Philadelphia and Erie road. There are other collieries, however, that are connected by rail with the Philadelpha and Erie.

The colliery at St. Marys for the past year gave employment to over a hundred miners, and produced about one hundred thousand tons of coal.

It may be well to remark here that the counties of Jefferson, Forest, Warren, M'Kean, Elk, Cameron and Clinton in one sense of the term are very new. New in respect to railroad facilities for developing their vast mineral and other resources. It is only a few years, comparatively, since railroads entered their domain and afforded them transportation for the vast products of coal, iron, oil and lumber contained within their borders. The construction of the Philadelphia and Erie, which was completed in 1864, gave some of these counties an outlet and opened the way for further developements. The proposed route of the Mahoning and Susquehanna railroad company, commencing at Indiana, the county seat of Indiana county, and extending northward by the way of Punxsutawney and Brookville, thence to the Clarion oil region, on the Clarion river, in Forest county, and there connecting with the Warren and Forest railroad company's proposed route through the county of Forest to Sheffield, in the county of Warren; thence *via* Warren up the valley of the Conewunga to the New York State line, there connecting with lines already completed to Buffalo and the Lakes, bids fair to open up a large and rich hitherto undeveloped coal, iron, oil and lumber region.

Then again their close proximity to the State of New York will enable them to enlist capital to develop their latent resources and profitable connections by rail will be more fully consummated. They have already about forty miles east, made judicious connections from Driftwood *via* the low grade of the Allegheny valley to Pittsburgh, and it will only require but a few years more to open up this portion of our Commonwealth. Capital has sought out these regions, and although the present is marked by a great depression in the prices of the productions of these counties, yet the time is not far distant when they will become a center of valuable trade and commerce.

Emporium, the county seat of Cameron county, is located on the Driftwood branch of the Sinnemahoning, a tributary of the West Branch of the Susquehanna in a great lumber centre, on the line of the Philadelphia and Erie railroad. It has recently made a railroad connection leading north, touching the western border of Potter county, and striking the Allegheny river at Port Allegheny, thence north *via* Olean to Buffalo, N. Y., thereby materially increasing her facilities for trade and the marketing of her products, as will be seen by the following schedule of the business done by the Buffalo, New York and Philadelphia railroad, to which she has contributed a liberal share.

Length of main line of road, from Buffalo, N. Y., to Emporium, Pa	120.55 miles.
Length of main line of road laid	120.55 "
Length of main line of road laid in Pennsylvania	41.90 "
Length of sidings	19.15 "
Gauge of road	4 ft. 8½ in.
Weight of rail per yard on main track	56 ,60 & 62 lbs.

Monthly statement of passengers (all classes) carried in cars:

October, 1874	20,021	May, 1875	17,420
November, 1874	17,695	June, 1875	22,825
December, 1874	17,707	July, 1875	22,485
January, 1875	15,426	August, 1875	27,438
February, 1875	12,527	September, 1875	23,860
March, 1875	15,995		
April, 1875	16,065	Total	229,464

The amount of freight, specifying the quantity in tons:

Anthracite coal	$69,891\frac{346}{2000}$
Bituminous coal	$63,347\frac{1953}{2000}$
Petroleum and other oils	$521\frac{1470}{2000}$
Pig iron	$652\frac{707}{2000}$
Railroad iron	$1,870\frac{1702}{2000}$
Other iron or castings	$3,615\frac{064}{2000}$
Stone and lime	$2,271\frac{898}{2000}$
Agricultural products	$24,575\frac{1416}{2000}$
Merchandise and manufactures	$24,890\frac{1158}{2000}$
Live stock	$5,681\frac{617}{2000}$
Lumber	$54,372\frac{880}{2000}$
Other articles	$61,777\frac{351}{2000}$
Total	$313,467\frac{1562}{2000}$

Driftwood—At Driftwood the Allegheny Valley Low Grade railroad intersects with the Philadelphia and Erie, one hundred and sixty-eight miles from Erie. Over this road the citizens of Cameron and Clinton counties have an opportunity of sending their products to Pittsburgh, and thence down the Ohio. You are still in the lumber and coal regions.

At Wistar, one hundred and eighty-one miles from Erie, are the iron works of the Wistar coal and iron company. The coal of this company has been analyzed, with the following results:

Volatile matter	30 per cent.
Fixed carbon	66 "
Ash	4 "
	100 per cent.

At the Philadelphia gas company works the following test has been made of this coal:

Pounds of coal carbonized	12,000
Cubic feet of gas made	58,840
Cubic feet gas per pound of coal	457
Pounds of coke	9,300
Gallons of tar	38
Illuminating power	5 ft.

Batwing burner under pressure of two inches, equal to sixteen candles.

Eight tons of this coal was sent to Johnstown, where it went through a coking process in ovens made for the purpose, yielding a bright, silvery coke—eighty per cent. of carbon in coke, losing only twenty per cent. in the process of coking.

Iron ore is also found here in great abundance.

The following analysis by Prof. J. Blodget Britton and W. H. Gregg, M. D., assayers, is herewith appended—samples taken from the upper and lower seams respectively:

UPPER SEAM.

Oxide iron	57.10
Silica	10.10
Lime, etc	32.90
	100.00

LOWER SEAM.

Oxide iron	52.50
Silica	22.00
Carbonate of lime	25.50
	100.00

Analyses of these ores made by skillful assayists in laboratories at Philadelphia and elsewhere proved very nearly same results as given above. A seam of workable ore some 500 feet above railroad track was shafted upon in September last, which contained thirty-two per cent. of metallic iron.

As it has been stated heretofore, these new counties are being rapidly developed, and will ere long take a position which their great natural resources entitle them. As the great forests of timber melt away before the enterprise of the lumberman other industries will take their place.

Westport is a lumber town situated near the confluence of Kettle creek with the west branch of the Susquehanna. It is the home of Hon. Amos C. Noyes, one of the most enterprising lumbermen of that section of the State. He is largely engaged in the manufacture of lumber, lath, shingles, etc., giving employment to many men.

Renovo is finely situated on the West Branch of the Susquehanna, one hundred and ninety-five miles from Erie, and twenty-seven from Lock Haven, the county seat of Clinton.

It contains a population of about two thousand inhabitants, many of whom find employment in the large and extensive car shops of the Philadelphia and Erie railroad company.

From this point to the city of Lock Haven, with occasional exceptions, the highway, river and railroad absorb all the available space in the valley. The mountains on either side are high and precipitous, lifting their craggy peaks far above the valley. The numerous creeks or "runs" that put into the river have worn deep channels down through the mountain ranges, giving the face of the mountains a jagged and rough appearance. The occupation of the inhabitants is divided between lumbering, farming and mining, the lumber interest predominating. At Farrandsville, fire brick are extensively burned, and collieries of bituminous coal are in the vicinity.

Lock Haven, the county seat and metropolis of Clinton county, is situated on the south-west side of the West Branch of the Susquehanna, near the mouth of the Bald Eagle Creek. It contains a population of about ten thousand inhabitants. The Bald Eagle Valley railroad intersects the Philadelphia and Erie at this point and running in a south-westerly course makes connections with the Pennsylvania railroad at Tyrone, distant from Lock Haven fifty-one miles. The city of Lock Haven is second only to Williamsport in all this region in the lumber trade. A large amount of capital is invested by its citizens in the lumber business and a great amount of lumber is annually manufactured, giving employment to thousands of men.

From Lock Haven to Williamsport, a distance of twenty-five miles, the valley expands, the mountains are lessened in height, the soil is rich and fertile, and some of the finest farming lands in the State are to be found between these two points.

Jersey Shore, a town about midway between Lock Haven and Williamsport, is surrounded by a rich and alluvial soil. Near this point Pine creek empties into the West Branch, having its source in the highlands of Potter, near the northern boundary of the State. A railroad is in process of construction from this point, intending to connect with a New York State branch at the State line. When it is completed it will develop a country rich in coal, iron and lumber, and afford transportation at all seasons of the year to a large section of country hitherto unprovided with railroad facilities.

Williamsport contains a population of about 20,000 inhabitants, and is elegantly situated on the north bank of the West Branch of the Susquehanna river. Within its corporate limits a large tributary, the Lycoming creek, empties into the West Branch from the north. It is a city of rapid growth. In 1856 it contained a population of about 2,500; in 1860, 5,644, and in 1870, 16,030. Many causes conspired to produce these results, but the predominating interest was the extensive facilities it afforded for the manufacturing and marketing of lumber. Other industrial interests now are aiding in maintaining its position, consisting in part of rubber works, foundries, machine shops, furnaces, saw and tool works, tanneries, piano manufactories, etc., etc. It is regularly and tastefully laid out. Many fine residences, public buildings and business places, are to be seen here. It is also quite a railroad centre. At this point the Elmira and Williamsport railroad, now under control of the Northern Central, the Catawissa, now leased by the Reading railroad, and the Philadelphia and Erie intersect.

RAILROADS.

The various railroads passed over in this tour, were in a good condition, many miles of which were laid with steel rails. The road beds as a general thing are well ballasted, and the bridges, aqueducts, tunnels, etc., safe and secure. Every precaution seems to have been taken to make the life of the passenger safe and the transportation of freight rapid. Several complaints have been made at intermediate points between Pittsburgh and Harrisburg, and between Erie and Williamsport in relation to the transportion of freight, alleging that discrimination, prejudicial to the shipper, at these local points were made by the railroad companies. But so far as the safety and convenience of the passenger and freight trains and the urbanity and civility of the employees in charge was concerned no complaints were heard, but on the other hand commendation and praise. The immense passenger traffic carried on during the year on account of the centennial exhibition at Philadelphia, worked the main lines of railroads in the State to their utmost capacity. Millions of human beings have been safely carried over the principal lines without accident. This is indeed a very flattering compliment to those having the immediate charge of the transportation, when the fact is taken into consideration that thousands of passengers who took passage upon the cars were not used to or familiar with this mode of conveyance, many of them never before having been in the cars to ride beyond their native town or county.

Pennsylvania now contains within her limits over nine thousand miles of railroads, and when the peculiar physical configuration of the State is taken into consideration, this fact is highly creditable to the enterprise of the people and the skill of its civil engineers.

The following table was prepared by Mr. John O. Keim, of Reading, Berks county, and published in the *Railway World*, from which the extract is taken:

COUNTIES.	Projected,	Main......	Sidings....	Total......
Adams—				
Hanover Junction, Hanover and Gettysburg railroad	10	17	5	32
Littlestown, Frederick division, Pennsylvania railroad	......	10	3	13
	10	27	8	45
Allegheny—				
Pennsylvania railroad	......	16	30	46
Allegheny Valley and Plum Creek	......	32	19	51
Chartiers	......	8	½	8½
Edgewood	......	1	½	1½
Lawrenceville and Evergreen	......	2½	1	3½
Little Saw Mill Run	......	3	1	4
Pittsburg and Castle Shannon	9	6	1	16
Pittsburg, Cincinnati and St. Louis	......	18	8	26
Pittsburg, Fort Wayne and Chicago	......	17	14	31
Pittsburg, Virginia and Charleston	......	21	10	31
West Pennsylvania	......	29	13	42
	9	179½	105	293½
Armstrong—				
Allegheny Valley and Low Grade Division	......	35½	10	45½
Parker and Karns City	......	2½	½	3
Shenango and Allegheny Valley	10	......	......	10
Bostonia Junction Branch	......	6	......	6
	10	44	10½	64½
Beaver—				
Cleveland and Pittsburg	......	15	2	17
New Castle and Beaver Valley	......	3	1	4
Pittsburg, Fort Wayne and Chicago	......	32	20	52
New Galilee Branch	......	6	½	6½
	......	56	23½	79½
Bedford—				
Bedford and Bridgeport	......	49¼	15	64¼
Huntingdon and Broad Top	......	24	12	36
Six Mile Run	......	4	1	5
Pittsburg and Connellsville	......	12	3	15
Southern Pennsylvania	7	......	......	7
	7	89¼	31	127¼
Berks:				
Allentown Railroad	17	4½	½	22
Philadelphia and Reading	......	35	45	80
Berks and Lehigh	......	27	3	30
Catasauqua and Fogelsville	......	3	1	4
Colebrookdale Railroad	......	11½	2	13½
East Pennsylvania	......	22	16	38
Lebanon Valley	......	17½	14	31½
Moselem Branch	......	1¾	......	1¾
Reading and Columbia	......	6	2	8
West Reading Branch	......	2	¼	2¼
Perkiomen	......	¼	......	¼
Wilmington and Northern	......	20¼	3	23¼
Reading Branch	......	7	......	7
South Mountain	25	......	......	25
Oley Valley Narrow-gauge	13	......	......	13
Reading Branch, South mountain	20	......	......	20
	75	157¾	86¾	319½

RAILROADS OF PENNSYLVANIA—CONTINUED.

COUNTIES.	Projected,	Main......	Sidings...	Total......
Blair—				
Bell's Gap	.....	8½	1	9½
Bald Eagle Valley	.....	7	½	7½
Hollidaysburg Branch	.....	53½	10	63½
Newry Branch	.....	1	.....	1
Pennsylvania	.....	34	60	94
Tyrone and Clearfield	.....	4	½	4½
	.....	108	72	180
Bradford—				
Barclay	.....	16¼	6	22¼
Elmira and Williamsport	.....	35	8	43
Pennsylvania and New York Canal and R. R.	.....	48½	29	77½
Pennsylvania and New York Connections at Athens	.....	11¾	.....	11¾
State Line and Erie	.....	17	1	18
	.....	128½	44	172½
Bucks—				
Delaware Branch	....	14½	4	18½
Doylestown Branch	.....	7	1	8
North Pennsylvania	.....	17	16	33
North-east Pennsylvania	.....	4	½	4½
Philadelphia and Trenton	.....	14	18	32
Delaware and Lancaster	17	.....	.....	17
	17	56½	39½	113
Butler—				
Butler Extension, West Pennsylvania	.....	21	8	29
Parker and Karns City	15	8	¾	23¾
Shenango and Allegheny	18	15	3	36
	33	44	11¾	88¾
Cambria—				
Ebensburg and Cresson	.....	11	½	11½
Pennsylvania railroad	.....	34	54	88
	.....	45	54½	99½
Cameron—				
Allegheny Valley	.....	9	5	14
Buffalo, New York and Philadelphia	.....	8	2	10
Philadelphia and Erie	.....	37	12	49
	.....	54	19	73
Carbon—				
Lehigh and Susquehanna	.....	32	48	80
Lehigh Valley railroad	.....	35	50	85
Nesquehoning Branch	.....	11½	6	17½
Penn Haven Junction	.....	17¾	5	22¾
Gravity railroad	.....	10		10
Hazel Creek Bridge to Tombickon	.....	3¾	.....	3¾
Mahoning Division	.....	15	3	18
Lehigh and Eastern	10	.....	.....	10
	10	125	112	247
Centre—				
Tyrone and Clearfield	.....	16	2	18
Bald Eagle Valley	.....	38	8	46
Bellefonte Branch	.....	2½	.....	2½
Bellefonte and Snow Shoe	.....	19	3¾	22¾
Lewisburg, Centre and Spruce Creek	46	.....	.....	46
	46	75½	13¾	135¼

RAILROADS OF PENNSYLVANIA—CONTINUED.

COUNTIES.	Projected,	Main.....	Sidings...	Total ...
Chester—				
Philadelphia and Reading	......	10	20	30
Port Kennedy	......	1¼	¼	1½
Pickering Valley	......	11	½	11½
Chester Valley	......	16	2	18
Cedar Hollow	......	3	......	3
Wilmington and Northern	......	34	5½	39½
Pennsylvania	......	36	60	96
East Brandywine and Waynesboro'	......	23	4	27
West Chester and Philadelphia	......	4	1	5
West Chester	......	9	½	9½
Philadelphia and Baltimore Central	......	26¾	3½	30¼
Peach Bottom	......	8	¼	8¼
Pennsylvania and Delaware	......	34	1½	35½
Wilmington and Western	......	2½	¼	2¾
West Chester and Phœnixville	14	......	......	14
Philadelphia and Chester	16	......	......	16
Delaware and Lancaster	20	......	......	20
	50	218½	99¼	367¾
Clarion—				
Sligo Branch	......	10½	2	12½
Allegheny Valley	......	22	13	35
River Division	......	28	6	34
	......	60½	21	81½
Clearfield—				
Allegheny Valley	......	19	4	23
Tyrone and Clearfield	......	39	6	45
Moshannon Branch, Dunbar Branch, etc	......	14½	......	14½
	......	72½	10	82½
Clinton—				
Bald Eagle Valley	......	9	2	11
Philadelphia and Erie	......	58	13	71
	......	67	15	82
Columbia—				
Lackawanna and Bloomsburg	......	20	5	25
Danville, Wilkes-Barre and Hazleton	......	17	2	19
Catawissa and Williamsport	......	17	2	19
Mahanoy Division, Lehigh Valley	......	8	2	10
	......	62	13	73
Crawford—				
Erie and Pittsburgh	......	27	6	33
Atlantic and Great Western	......	41	18	59
Franklin Branch	......	9	......	9
Union and Titusville	......	23	4	27
Oil Creek and Allegheny River	......	20	8	28
Dunkirk, Allegheny and Pittsburgh	......	2	½	2½
Lake Shore and Michigan Southern	......	6	......	6
	......	128	36½	164½
Cumberland—				
Cumberland Valley	......	41	10	51
Dillsburg Branch	......	6	½	6½
South Mountain Iron Company	......	18	2¼	20¼
Harrisburg and Potomac	30	10	2½	42½
Northern Central	......	7	......	7
	30	82	15¼	127¼

RAILROADS OF PENNSYLVANIA—CONTINUED.

COUNTIES.	Projected,	Main......	Siding......	Total......
Dauphin—				
Northern Central	......	27	10	37
Summit Branch	......	20	10¼	30¼
Lykens Valley Branch	......	1½	......	1½
Pennsylvania	......	25	40	65
Columbia Branch	......	4	......	4
Lebanon Valley	......	15	23	38
South Mountain	15	......	......	15
	15	111½	89¼	215¾
Deleware—				
Philadelphia and Baltimore Central	......	10	3	13
Pennsylvania	......	8	12	20
West Chester and Philadelphia	......	20	2	22
Chester Creek	......	7¼	1	8¼
Philadelphia, Wilmington and Baltimore	......	13	18	31
Philadelphia and Chester	......	3¼	......	3¼
Philadelphia and Chester County	10	......	......	10
	10	61½	36	107½
Elk—				
Allegheny Valley	......	20	4	24
Philadelphia and Erie	......	41	15	56
Early Branch	......	13	2	15
	......	74	21	95
Erie—				
Erie and Pittsburgh	......	12	4	16
Atlantic and Great Western	......	20	9	29
Union and Titusville	......	2	......	2
Oil Creek and Allegheny	......	7	2	9
Buffalo, Corry and Pittsburgh	......	6	......	6
Philadelphia and Erie	......	38	16	54
	......	129	81	210
Fayette—				
Pittsburgh and Connellsville	......	39	11½	50½
Fayette Branch	......	14	1½	15½
Mount Pleasant Branch	......	5	......	5
South-west Pennsylvania	......	19½	3	22½
Uniontown and West Virginia	8	......	......	8
	8	77½	16	101½
Fulton—				
Southern Pennsylvania	25	......	......	25
Forest—				
Oil Creek and Allegheny River	......	15	4	19
Franklin—				
Cumberland Valley	......	27	5	32
Southern Pennsylvania	......	23¼	1¾	25
Southern Pennsylvania Ore Bank	......	2	......	2
Mont Alto	4	10½	1¼	15¾
Western Maryland	......	½	......	½
Harrisburg and Potomac	30	......	......	30
	34	63¼	8	105¼
Greene—				
Pittsburgh, Virginia and Charleston	15	......	......	15
Waynesburg and Washington	20	......	......	20
	35	......	......	35

RAILROADS OF PENNSYLVANIA—Continued.

COUNTIES.	Projected,	Main......	Sidings...	Total.....
Huntingdon—				
Pennsylvania railroad	......	25	35	60
Huntingdon and Broad Top	......	21	8½	29½
Shoup's Run	......	9¼	......	9¼
East Broad Top	......	30	5¼	35¼
Lewisburg, Centre and Spruce Creek	8	......	......	8
	8	85¼	48¾	142
Indiana—				
West Pennsylvania	......	7½	2	9½
Indiana Branch	......	19	3	22
	......	26½	5	31¼
Jefferson—				
Allegheny Valley	......	36	8	44
Juniata—				
Pennsylvania railroad	......	12	15	27
Lancaster—				
Columbia and Port Deposit	......	25	......	25
Pennsylvania railroad	......	46	32	78
Columbia Branch	......	29	3	32
East Brandywine and Waynesburg	......	4½	......	4½
Reading and Columbia	......	34	5	39
Mount Hope Branch	......	2½	......	2½
Peach Bottom	......	10	¼	10¼
Delaware and Lancaster	20	......	......	20
	20	174¾	43¼	238
Lawrence—				
New Castle railroad and Mining company	......	3¾	¾	4½
New Castle and Beaver Valley	......	12	3	15
Erie and Pittsburgh	......	12	4	16
New Castle and Franklin	......	13	½	13½
Lawrence railroad	......	9	1	10
	......	49¾	9¼	59
Lebanon—				
Lebanon Valley	......	21½	18	39½
Cornwall railroad	......	7½	3½	11
Lebanon and Tremont	......	17	10	27
Schuylkill and Susquehanna	......	11	4	15
South Mountain	15	......	......	15
	15	57	35½	107½
Lehigh—				
Perkiomen	......	12¼	2	14¼
East Pennsylvania	......	14	20	34
Catasauqua and Fogelsville	......	22½	7	29½
Berks and Lehigh	......	16	1¼	17¼
Slatesdale Branch	......	3¾	......	3¾
Ironton Branch	......	11	2	13
North Pennsylvania	......	4	2	6
Lehigh Valley	......	24	40	64
Lehigh and Susquehanna	......	9	15	24
South Mountain	20	......	......	20
	20	116½	89¼	225¾

RAILROADS OF PENNSYLVANIA—CONTINUED.

COUNTIES.	Projected,	Main......	Sidings...	Total .....
Luzerne—				
Lackawanna and Bloomsburg	......	43	5	48
Lumber Yard to Milnersville	......	18¼	......	18¼
Danville, Hazleton and Wilesbarre	......	10	2	12
Delaware and Hudson Canal	......	31½	12	43½
Lehigh Valley	......	30	50	80
Lehigh and Susquehanna	......	38	45	83
Nescopec Branch P. & N. Y. Canal and R. R	......	9	......	9
Pennsylvania and New York Canal and R. R	......	19	18	37
Gravity Branch P. and N. Y. Canal and R. R	......	14½	......	14½
Nanticoke........do..................do	......	20¼	......	20¼
Tresckow	......	6½	2	8½
Delaware, Lackawanna and Western	......	35	45	80
Plymouth, Wilkesbarre and Gravity	......	5	......	5
Pennsylvania Coal Company	......	30	38	68
Hazel Creek Bridge to Tomhickon	......	30	......	30
Jefferson Branch (Erie Railway)	......	5	4	9
Penn'a and N. Y. Canal and R. R., Branches	......	11¼	......	11¼
Springbrook	......	8½	¼	8¾
Lehigh and Eastern	10	......	......	10
	10	364¾	221¼	596
Lycoming—				
Catawissa and Williamsport	......	17½	4	21½
Philadelphia and Erie	......	30	20	50
Muncy Creek	10	7	½	17½
Elmira and Williamsport	......	35	6	41
Jersey Shore, Pine Creek and Buffalo	37	......	......	37
	47	89½	30½	167
M'Kean—				
Wilcox and Howard Hill	......	8	......	8
Philadelphia and Erie	......	16	6	22
Buffalo, New York and Philadelphia	......	27	4	31
M'Kean and Buffalo	......	22¼	2¾	25
Buffalo, Bradford and Pittsburgh	......	28	4	32
Jersey Shore, Pine Creek and Buffalo	5	......	......	5
	5	101¼	16¾	123
Mercer—				
Shenango and Allegheny	......	32	3	35
Erie and Pittsburg	......	30	6	36
Atlantic and Great Western	......	22	20	42
Mahoning Division	......	10	......	10
Sharpsville, Wheatland, Sharon and Greenfield	6	4	¼	10¼
Stoneboro' Branch	......	1½	......	1½
Franklin Branch	......	2	......	2
Lake Shore and Michigan Southern	......	26	10	36
New Castle and Franklin	......	23	1	24
	6	150½	40¼	196¾
Mifflin—				
Pennsylvania railroad	......	36	50	86
Mifflin and Centre County	......	12½	6	18½
Sunbury and Lewistown	......	17	1	18
	......	65½	57	122½
Monroe—				
Delaware, Lackawanna and Western	......	36	40	76
Lehigh and Lackawanna	11	......	......	11
Lehigh and Eastern	30	......	......	30
	41	36	40	117

RAILROADS OF PENNSYLVANIA—CONTINUED.

COUNTIES.	Projected,	Main......	Sidings.....	Total......
Montgomery—				
Pennsylvania railroad	......	2	4	6
Perkiomen	......	26	3	29
North Pennsylvania	......	19	23	42
Philadelphia and Reading	......	14½	25	39½
Germantown and Norristown	......	7	10	17
Plymouth	......	9½	2	11½
Chester Valley	......	5½	1	6½
Colebrookdale	......	1¼	¼	1½
Stoney Creek	......	10	1	11
Doylestown	......	3¼	½	3¾
Delaware River Railroad	......	6	1	7
North-east Pennsylvania	......	5½	½	6
Delaware and Lancaster	20	......	......	20
	20	109½	71¼	200¾
Montour—				
Lackawanna and Bloomsburg	......	9	1	10
Danville, Wilkesbarre and Hazleton	......	2	½	2½
Catawissa and Williamsport	......	18	4	22
	......	29	5½	34½
Northampton—				
North Pennsylvania	......	7	9	16
Shimersville Branch	......	1½	......	1½
Lehigh Valley	......	12	20	32
Lehigh and Susquehanna	......	26	35	61
Coplay Branch	......	1	......	1
Lehigh and Lackawanna	10	15	1½	26½
Delaware, Lackawanna and Western	......	8	10	18
South Mountain	25	......	......	25
	35	70½	75½	181
Northumberland—				
Lackawanna and Bloomsburg	......	8	3	11
Danville, Wilkesbarre and Hazleton	......	15	4	19
Catawissa and Williamsport	......	4	1	5
Mine Hill and Schuylkill Haven	......	5½	5	10½
Northern Central	......	19	8	27
Shamokin Valley and Pottsville	......	27¼	9½	36¾
Philadelphia and Erie	......	24	15	39
Mahanoy and Shamokin	......	42	8	50
	......	144¾	53½	198¼
Perry—				
Pennsylvania railroad	......	30	40	70
Northern Central	......	1	......	1
Schuylkill and Susquehanna	......	1	......	1
	......	32	40	72
Philadelphia—				
Pennsylvania	......	8	16	24
Frankford and Holmesburg	......	4	1	5
West Chester and Philadelphia	......	3	2	5
Philadelphia, Wilmington and Baltimore	......	5	10	15
Philadelphia and Chester	......	7	1	8
North Pennsylvania	......	8½	14	22½
Philadelphia and Reading	......	7	16	23
Northern Liberties and Penn Township	......	1½	......	1½
Connecting	......	7¼	......	7¼
Delaware Extension	......	3¾	4¾	8½
Germantown and Norristown	......	13	16	29

RAILROADS OF PENNSYLVANIA—Continued.

COUNTIES.	Projected,	Main.....	Sidings ...	Total.....
Philadelphia—Continued.				
Chestnut Hill	......	4	1	5
Philadelphia and Trenton	......	12½	28	40½
Southwark	......	1¾	1¼	3
Philadelphia and Chester County	14	......	......	14
	14	86¼	111	211½
Pike—				
Hawley Branch	......	14¾	2	16¾
Erie	......	25	30	55
Lehigh and Eastern	30	......	......	30
	30	39¼	32	101¾
Potter—				
Buffalo, New York and Philadelphia	......	7	½	7½
Jersey Shore, Pine Creek and Buffalo	32	......	......	32
	32	7	½	39½
Schuylkill—				
Peoples' Railroad	......	6	½	6½
Catawissa and Williamsport	......	24½	2	26½
Lebanon and Tremont	......	27	10	37
Schuylkill and Susquehanna	......	26	8	34
Mahanoy Division, Lehigh Valley	......	30	5	35
Nesquehoning Branch	......	5	3	8
Philadelphia and Reading	......	32	50	82
Mount Carbon	......	8½	......	8½
Mahanoy and Shamokin	......	22½	10	32½
Little Schuylkill	......	28¼	27½	55¾
Panther Creek	......	3	......	3
Mine Hill and Schuylkill Haven	......	37	60	97
Mount Carbon and Port Carbon	......	2½	13½	16
Mill Creek	......	9	12½	21½
Schuylkill Valley	......	11	19½	30½
East Mahanoy	......	10½	3½	14
	......	282¾	225	507¾
Snyder—				
Sunbury and Lewistown	......	26½	4	30½
Selinsgrove and North Branch	14	......	......	14
	14	26½	4	44½
Somerset—				
Pittsburgh and Cincinnati	......	51	11	62
Somerset and Mineral Point	......	9¼	¼	9½
Salisbury Branch	......	2¾	......	2¾
	......	63	11¼	74¼
Sullivan—				
Sullivan and Erie	......	7	¾	7¾
Muncy Creek	15	......	......	15
	15	7	¾	22¾
Susquehanna—				
Delaware, Lackawanna and Western	......	28	29	57
Erie	......	17	22	39
Montrose	......	19	½	19½
Jefferson Branch	......	33	4	37
	......	97	55½	152½

RAILROADS OF PENNSYLVANIA—CONTINUED.

COUNTIES.	Projected,	Main......	Sidings....	Total......
Tioga—				
Corning, Cowanesque and Antrim	......	37	3	40
Cowanesque Branch	......	11	1	12
Tioga railway	......	30	9¼	39¼
Blossburg and Arnot	......	6	......	6
Jersey Shore, Pine Creek and Buffalo	20	......	......	20
	20	84	13¼	117¼
Union—				
Lewisburg, Centre and Spruce Creek	10	19	1	30
Catawissa and Williamsport	......	11½	3	14½
	10	30½	4	44½
Venango—				
Allegheny Valley railroad	......	46	13	59
Pithole Valley railroad	......	7	......	7
Franklin Branch	......	22	2	24
Oil Creek and Allegheny River	......	33	11	44
Lake Shore and Michigan Southern	......	25	8	33
Cherry Run	......	3	......	3
	......	136	34	170
Warren—				
Atlantic and Great Western	......	9	4	13
Oil Creek and Allegheny River	......	20	8	28
Dunkirk, Allegheny Valley and Pittsburgh	......	46	5	51
Philadelphia and Erie	......	44	17	61
	......	119	34	153
Washington—				
Pittsburgh, Cincinnati and St. Louis	......	17	8	25
Chartiers	......	16	1	17
Pittsburgh, Virginia and Charleston	30	5	3	38
Washington and Waynesburg	24	......	......	24
Wheeling, Pittsburgh and Baltimore	......	18	½	18½
	54	56	12½	122½
Wayne—				
Honesdale Branch	......	9	1	10
Hawley	......	1¼	......	1¼
Pennsylvania Canal company's railway	......	17	20	37
Gravity Branch	......	14½	......	14½
Delaware and Hudson	......	5	3	8
	......	46¾	24	70¾
Westmoreland—				
Allegheny Valley	......	12	2	14
Pennsylvania railroad	......	53	83	136
Pittsburgh and Connellsville	......	19	6	25
Mt. Pleasant Branch	......	5	½	5½
South-west Pennsylvania	......	19	3	22
West Pennsylvania	......	29	5	34
Ligonier Valley	......	10	......	10
	......	147	99½	246½
Wyoming—				
Pennsylvania and New York Canal and railroad	......	36½	20	56½
Delaware, Lackawanna and Western	......	8	8¼	16¼
Montrose	......	8	½	8½
	......	52½	28¾	81¼
York—				
Dillsburg Branch	......	2	......	2
Northern Central	......	49½	49½	99

RAILROADS OF PENNSYLVANIA—CONTINUED.

COUNTIES.	Projected,	Main......	Sidings....	Total......
York—Continued.				
Peach Bottom	......	36	1	37
Bachman Valley	......	9	¼	9¼
Hanover and York Branch	......	18½	2	20½
York Branch	......	13½	2	15½
Hanover Junction, Hanover and Gettysburg	......	13	2	15
	......	141½	56¾	198¼

RECAPITULATION.

COUNTIES.	Projected.......	Main and branch	Second and side track.........	Total track in miles.........
Adams	10	27	8	45
Allegheny	9	179½	105	293½
Armstrong	10	44	10½	64½
Beaver	......	56	23½	79½
Bedford	7	89¼	31	127¼
Berks	75	157¾	86¾	319½
Blair	......	108	72	180
Bradford	......	128½	44	172½
Bucks	17	56½	39½	113
Butler	33	44	11¾	88¾
Cambria	......	45	54½	99½
Cameron	......	54	19	73
Carbon	10	125	112	247
Centre	46	75½	13¾	135¼
Chester	50	218½	99¼	367¾
Clarion	......	60½	21	81½
Clearfield	......	72½	10	82½
Clinton	......	67	15	82
Columbia	.....	62	13	75
Crawford	......	128	36½	164½
Cumberland	30	82	15¼	127¼
Dauphin	15	111½	89¼	215¾
Delaware	10	61½	36	107½
Elk	......	74	21	95
Erie	......	129	81	210
Fayette	8	77½	16	101½
Forest	......	15	4	19
Franklin	34	63¼	8	105¼
Fulton	25	....	....	25
Greene	35	....	....	35
Huntingdon	8	85¼	48¾	142
Indiana	......	26½	5	31½
Jefferson	.....	36	8	44
Juniata	......	12	15	27
Lancaster	20	174¾	43¼	238
Lawrence	......	49¾	9¼	59
Lebanon	15	57	35½	107
Lehigh	20	116½	89¼	225¾
Luzerne	10	364¾	221¼	596
Lycoming	47	89½	30½	167
M'Kean	5	101¼	16¾	123

RECAPITULATION—CONTINUED.

COUNTIES.	Projected......	Main and branch	Second and side track.........	Total track in miles.........
Mercer	6	150½	40¼	196¾
Mifflin	......	65½	57	122½
Monroe	41	36	40	117
Montgomery	20	109½	71¼	200¾
Montour	......	29	5½	34½
Northampton	35	70½	75½	181
Northumberland	......	144¾	53½	198¼
Perry	......	32	40	72
Philadelphia	14	86¼	111	211¼
Pike	30	39¾	32	101¾
Potter	32	7	½	39½
Schuylkill	......	282¾	225	507¾
Snyder	14	26½	4	44½
Somerset	......	63	11¼	74¼
Sullivan	15	7	¾	21¾
Susquehanna	......	97	55½	152½
Tioga	20	84	13¼	117¼
Union	10	30½	4	44½
Venango	......	136	34	170
Warren	......	119	34	153
Washington	54	56	12½	122½
Wayne	......	46¾	24	70¾
Westmoreland	......	147	99½	246½
Wyoming	......	52½	28¾	81¼
York	......	141½	56¾	198¼
Grand total, January 1, 1877	840	5,585¾	2,748½	9,174¼

City passenger railways, aggregating 429 miles, and the underground railways in the anthracite coal regions, approximating 425 miles, are not included in the above table. There are, also, 784 miles of canals in the State, and the electric telegraph uses 20,340 miles of wire in condensing "time."

While the above tables are of special interest to those who are identified with, or affected by, the railway development of this Commonwealth, they may also convey instruction to the students of internal transportation who reside beyond the bounds of Pennsylvania, because means have been found on the soil of this State for not only developing a general system which has, on the whole, been more prosperous and productive than that of any other portion of the Union, but also for successfully conducting railways specially adapted to nearly every class of service. In addition to a great trunk line, the State has branch roads adapted to nearly every conceivable use, a number of gigantic coal roads, oil roads, roads that derive their revenues almost exclusively from a supply of the wants of flourishing agricultural districts, and, in short, roads that excel in the performance of nearly every class of passenger and freight service, whether through or local.

In Pennsylvania, as compared with other Commonwealths, railway interests have at once attained the greatest magnitude, the most varied development, and yet yielded larger proportionate returns to their owners than the railways of any other large State.

INDUSTRIAL INTERESTS.

We have already alluded to the depression and stagnation in business which is felt along the valley of the Juniata.

As we descended the western slope of the Alleghenies we found the same state of business depression existing. Thousands of men were idle, and millions of dollars invested either in mining, mechanical or manufacturing were lying dormant and unremunerative. This was true especially at Pittsburgh. The general stagnation in business spread like a pall over the industries of that region and made them cheerless in the extreme. Thousands were out of employment and many destitute of the ordinary necessaries of life.

Along the Allegheny valley and throughout the entire oil region depression in business was manifest, yet subsequent to our visit it is learned that oil suddenly advanced in price, thereby stimulating a healthy trade in that product. At Erie the business men were complaining sadly, and in fact along the entire line of the Philadelphia and Erie railroad and especially among the lumbermen of Cameron, Clinton and Lycoming counties the lumber interest and those branches depending upon it, or connected therewith, a sad paralysis existed. We are hopeful that the crisis is past and that another year will find our great mining, manufacturing, commercial and agricultural interests in a more healthy and prosperous condition.

PETROLEUM.

Titusville, Pa., *December* 18, 1876.

Dear Sir:—I send you herewith a condensed statement of the past development of the Pennsylvania oil region, containing mainly such facts as our experience and practice to this date have taught us. I desire that it may be considered supplementary to the article on petroleum published in your last year's report.

Very respectfully,

HENRY E. WRIGLEY,
Civil and Mining Engineer, Titusville, Pa.

To W. Hayes Grier, *Chief of Bureau of Industrial Statistics.*

A REVIEW

Of all known and accepted facts relative to the production of petroleum in Pennsylvania.

BY HENRY E. WRIGLEY, CIVIL AND MINING ENGINEER

I make the following divisions of the subject:

1st. The origin of petroleum oil.

2d. The several conditions under which it is invariably found.
  - *a.* From the outcropping of bituminous shales.
  - *b.* From the existence of cavities or crevices above the bituminous shales, these cavities being overlaid with solid unbroken strata.
  - *c.* From the existence of crevices above the bituminous shales extending up to horizon of open pebble-rock lying at a depth not less than 100 nor greater than 2,000 feet, and this pebble-rock overlaid with close unbroken strata.

3d. Local or general outside facts that bear upon and modify these conditions.
  - *a.* The dip of the strata from the north-west.
  - *b.* The thinning out of members of a series.
  - *c.* The value and bearing of synclinals.
  - *d.* The probable existence of a pebble-rock under our fourth sand.
  - *e.* The line of subterranean temperature anticlinals.

4th. The immediate cause of the deposition of the pebble rock, and the uniformity of the current lines which gave it direction as exhibited from our past operating.

5th. The line between light and heavy oil.

6th. The axis of the fifth basin and the region east of it.

7th. A consideration of outside oil fields and their relative value.

I have already expressed my opinion that the study of oil production, by operators generally, has heretofore been "too local." When nature draws lines upon the surface of the earth, especially when she employs in the work the powerful agency of water, it is not within a short distance of five or ten miles that we can define the story she tells. Local exceptions will be abundant, and it is these local exceptions that hitherto have formed the study of oil men.

It seems to me that one should be, so to speak, "light in hand" in considering the matter. Where the main fact or general drift is accurately defined, it should be held to unflinchingly as an underthought, for it is not hard to see that while some obstacle might temporarily check or alter a strong natural force, yet the moment it was overcome its first and normal direction and effort would be resumed.

For this purpose I have confined this first stage of the work entirely to the accurate embodiment of the main points that are unquestioned and supreme, and which will not only rule and govern unmercifully all future work, but are also indispensable to its value.

With the same view I have also extended the area considered in my maps to over 21,000 square miles, although the actual area of pebble rock light oil territory does not exceed 2,000 square miles.

It is desirable to remember that the work of our office is simply a collection of facts, and these in two classes. 1st. Those that are known to be such by record and visible proof. 2d. Those which while not capable of immediate proof have been satisfactorily demonstrated and universally accepted.

THE ORIGIN OF PETROLEUM OIL.

Among the many theories that have been abandoned upon this subject we find no reason to go beyond the two distinct and different suppositions entertained by Lesley and Newberry. That of Lesley is briefly this: That the component materials of the oil were buried with the pebble-rock or horizon at which it is found. In support of this he shows very clearly that the total cubical contents of the cavities in pebble-rock, infinitesimal as they may appear to us, are still much greater in the aggregate than generally supposed, and capable of containing a great many times the whole amount of oil that has been taken from them. I have further extended his calculations for my own satisfaction, and to obtain a candid view of the subject, and I find as an illustration that all the petroleum that has ever been produced in Pennsylvania, if spread in a continuous lake over all the actual producing area, would be but a little over three inches deep. Nevertheless, I believe that to those thoroughly acquainted with the region the view of Professor Newberry presents a satisfactory and final explanation. I give his own words as follows:

"The Huron shale in judgment is the source of the petroleum obtained in the shales, and over-lying sandstone of western Pennsylvania; the disturbance which the rocks of that district have suffered seems to have favored the disengagement of the oil which emanates from the bituminous shale by spontaneous distillation, while the sandstone strata have afforded convenient reservoirs for its reception. The immense productiveness of wells in the Pennsylvania oil region is probably due to the fact that the clay shales interstratified with and over-lying the sandstones have formed an impervious cover to the reservoirs they afford. Hence the accumulation may have been going on for ages, and the quantity be great because little or none have been permitted to escape. A similar geological and physical structure must prevail whenever oil wells or fountain wells are possible. * * * *

HURON SHALE.

"Oil and gas springs are constantly associated with out-crops of this formation. * * * We have every reason to believe that the black shales, of which the Huron forms the western extension, supply all the oil to the oil wells on Oil creek, and gas to the gas wells on the lake shore.

* * *

"I have already referred to the Huron shale as the probable source of the greater part of the petroleum obtained in this country. This view has been opposed by high authority, but I think is now quite generally accepted by geologists. My reasons are briefly these:

"'1st. The Huron shale yields 10 to 20 gallons of oil to the ton by artificial distillation. Like all other organic matter, this is constantly undergoing spontaneous distillation resulting in the formation of oil and gas similar to those we make from the same substance.

"'2d. A line of oil and gas springs marks the out-crop of the Huron shale from New York to Tennessee. * * *

"The emanations from the Cleveland shales and those from the lower Silurian rocks at Collingwood, Canada, and those on the upper Cumberland river, Kentucky, are associated with similar deposits of black shale, which represent the Utica slate of New York.

3d. The wells on Oil Creek penetrates the strata immediately overlying the Huron shale, and the oil is obtained from the fissured and porous sheets of the Portage and Chemung groups which lie just above the Huron, and offer convenient reservoirs for the oil it furnishes. * * * *

"As it is known, the wells which in Ohio have been sunk to the vicinity of the Huron shale, have very generally yielded oil, but only in small quantities. The difference in the productiveness of the oil horizon in Ohio and Pennsylvania has caused considerable surprise and disappointment. It seems to me, however, easy of explanation. On Oil Creek the strata which underlie the surface are:

1st. The Argillaceous shales of the Waverly group and upper Chemung which form the sides and bottom of the valley below them, consist of several beds of sandstone, interstratified with shale which belong to the upper Chemung and lower Portage groups; still lower, the black shales of Portage and Genessee, having a thickness of several hundred feet. These strata have all felt the disturbing influences of the force which raised the Allegheny mountains. Here we have a peculiar geological substructure such as is specially favorable to the production and accumulation of Petroleum and such as must be more or less perfectly paralleled elsewhere to make very productive wells possible.

This structure consists in a great mass of carbonaceous strata below, more or less disturbed or loosened, from which the oil is supplied in a constant flow. Above this a strata of porus-jointed sandstone serving as reservoirs, where the constant product of oil and gas may accumulate for ages. Still higher argillaceous strata (slate) impervious in their texture, and not capable of being opened by fissures forming a tight cover which prevents their escape. As we go west from Oil creek into Ohio, we find both the composition and the structure of the rocks overlying the Huron exhibiting a decided change. In the first place the sandrocks of Oil creek seem to thin out, and to give place to fine impervious shales. In the second place all the strata becomes more homogeneous and compact, and the fissures of Oil creek are wanting." * * *

I have given these extracts very full because the facts contained in them are fully borne out by the data accumulated upon our map and the experience of the producer. These form the very foundation stones of the matter, and may be both condensed and illustrated as follows :

There are three essential requisites for the existence of oil in quantity : there are—first, the underlying shale ; second, the reservoir above it (either pebble-rock cavities or porous limestone,) and third, above this overlying strata unbroken and impenetrable (slate.) These three conditions exist together only within the belt defined upon our maps as the oil region.

The shale, sandrocks and slate are present to some extent through the Allegheny mountain country to the east of it, but all have been so much upheaved and disturbed that the gas generated in the shale found ample vent, and did not gather nor condense.

In Ohio our sandrocks are wanting, and therefore there was no reservoir other than a few chance crevices which have produced the small wells in that State.

For the reasons above given we draw two lines upon the map to indicate the eastern and western boundaries of the Pennsylvania oil region.

On the west we have the line of heavy oil territory, and on the east the line of the axis of the Fifth coal basin, being the point at which the greater upheaval begins.

It is barely possible that the western line may be slightly modified at some future time by finding a light oil below the heavy oil now obtained from an upper horizon. This, however, has been attempted so many times without success that it need not be considered at present.

3d. Local or general outside facts that bear upon and modify these conditions.

a. The dip of the strata from the north-west.—It is a common expression that there are two general dips to the strata, one to the east and one to the south. Correctly speaking, there is but one general dip, and that is to the south-east. A board or any plane surface with the upper left hand corner raised and the lower right hand corner depressed will convey the proper idea. This dip, of course, terminates on the east at the axis of the last coal basin, and it will be readily seen that a section due east and west, or due north and south, will each develop a fall of the strata, the first to the east and the other to the south. For this reason we find our pebble-rock horizon cropping out or coming to the surface in central Ohio and in Warren county, Pennsylvania.

Within this great dip are local undulations which must be considered in their proper place and given due weight. That at Brady's Bend, called by Lesley the Sixth coal basin, is one that especially interests us; one fact predicated upon the wave theory was demonstrated by Prof. Rogers, and is valuable; it is that the northern slopes of these undulating are always much steeper than the southern.

b. The thinning out of members of a series.—Almost all the local difference and excepting that occur to the generally accepted and defined outlines of our geology in this section, arise from this fact, and yet this is not a difficult matter to trace and define if properly noted at a few points, especially if confined to the horizon that immediately interests us.

Our sandrocks, Newberry tells us, thins out and run into shales in Ohio. The sands came from the east, sandstones pass into shales going west.

c. The value and bearing of synclinals and anticlinals.—The strata which forms this part of the United States, were deposited by the current of the great flood of ice and water that swept southward from the Laurentian highlands in British America, and the materials of which the strata are composed, is the debris and broken fragments of these mountains. These strata were of course deposited in perfectly level layers; when the continent began, however, to sink for the second time, the area of south-western Pennsylvania and vicinity sank lower than the rest forming the dips of which we have first spoken. The second great flood from the north, which carved out the Allegheny and other rivers, washed off the various members of the strata to the northward, and hence we have what we call the outcrops.

For instance, if the horizon of our oil sands were extended, they would run in the air for one thousand feet above lake Erie. After the second great flood, we have another rising of the continent beginning at the eastward, where the Allegheny mountains are thrown up, and the strata distorted in every shape, and gradually dying out in waves more and more gentle, until we reach western Pennsylvania. These waves are called synclinals and anticlinals. When they are very strongly marked they destroy all hopes of finding petroleum in their vicinity, because the fissures caused by the bends are so extensive as to allow of its entire evaporation. Where they are more gentle, and when the fissures, which are mainly vertical, do not extend quite to the surface, they serve as feeders to any cavities or beds of pebble-rock, wherein the gas forms the lower shales, can be condensed.

d. The probable existence of a pebble-rock under our fourth sand.—" The history of all the deep wells drilled in the oil region may be written in one word, 'failures.'

" No well defined sand like the third sand of Oil creek has been found below the plane of the regular third sand.

" The geological horizon at which the Beatty well (Warren) gets its oil lies at a depth of 600 feet below the regular petroleum measures."

The best evidence we have on this subject, as cited above, is contrary to the expectations that we shall ever find a lower oil pebble-rock. We can, however, assign a reason for this apart from experience, which, it seems to me, should be of itself conclusive. That is that the areas of the pebble-rocks, as we find them decrease rapidly as we go down. For instance, we find almost invariably throughout the region a first sand, and its surface area may be safely put at over 1,000 square miles. We find not so frequently a second sand whose surface area will probably not exceed 300 square miles. But *all* the area of third sand pebble-rock found in this amount of drilling does not reach fifty square miles. With such a rapidly decreasing proportion it is not difficult to account for the failure of deep wells.

e. The line of subterreanean temperature.—As we go towards the centre of the earth, in all parts of the world, the temperature increases. This has not affected our operating heretofore, but when a sandrock, in which we find our oil, is buried so deep that its temperature will not permit the presence of oil as a fluid, there we must draw upon the map a line which constitutes, as shown, the *line of temperature,* and the southern boundary of the Pennsylvania oil region. The most substantial consideration of this point can be deduced from the following data :

Artesian well at Grenelle, France, depth 1,757 ; surface 51° ; bottom 82°. Well at St. Louis, 1,515 feet; increase from surface 18°. Well at Charleston, S. C., 416 ; surface 68° ; 500 feet, 73°; 5 bottom 88°.

The temperature of the earth steadily increases with its depth. * * * Experiments establishing this increase of heat with descent have been made in many parts of the earth from Siberia to the torrid zone ; there is a well at Jakutsk, in Northern Siberia, dug through frozen ground to the depth of three hundred and eighty-two feet, at a depth of 50 feet the temperature was 17° at the bottom it was 26°.

At Sunderland, in England, there is a coal mine 1,500 feet below the level of the sea, there the increase of heat is 1° for every 59 feet. At the Guaxanto silver mine, in Mexico, the mean temperature at the surface is 68°, and at the depth of 1,713 feet, 98°. * * * * In the

English coal mines at a depth of 600 or 700 feet, the miners find a summer temperature the year round, working with no clothing but flannel drawers.

In a tin mine near Cornwall, at Redmuth, at a depth of 1,800 feet the temperature is 100°; the miners work naked and plunge in water pools at intervals to cool.

At Saltzmuth in Germany, in an Artesian well bored for salt water, 2,144 feet found the temperature of the water 91° on reaching the surface.

In considering the increase of temperature as we go below the surface of the earth two things should be remembered:

1st. That this increase is from the centre outward, and is not necessarily affected or controlled by the irregularities of the earth's surface, such as hills or mountains.

2nd. That the different estimates of the number of feet required for an increase of one degree are due partly to the fact that the earth's temperature varies on its surface, and partly to the cause above stated.

The increase would not be as rapid at New Orleans as it would at Portland, Maine, both wells say at an equal depth of 2,000 feet would indicate there the same temperature while the surface temperature of the two places vary perhaps twenty-five degrees. If the Huron shale lies in Pennsylvania but 2,000 feet on the average below our third sand, we should have a temperature of from 135 to 140°.

As the oil sands, however, thin out going west, there is every reason to suppose that the increased thickness of all the overlying measures would place the Huron shale here at a still greater depth and greater corresponding temperature.

STATISTICS.

I propose to give here simply a few general facts of interest, concerning the production of oil up to this date—facts more in detail can always be obtained from those specially engaged upon this branch of the business.

First.—There have been drilled in the Oil regions of Ohio, Pennsylvania and West Virginia, over 23,000 wells, at an aggregate cost of one hundred and ninety-two millions of dollars.

Second.—These wells have produced an aggregate amount of about eighty-eight millions of barrels, worth at the wells—over three hundred and eight millions of dollars—or at sea-board prices, when refined, four hundred and forty millions; of course part of this oil is used for home consumption.

Third.—The statement put forth in the last volume of your Bureau of Statistics, concerning the improbability of any further great extension of our present oil fields in Pennsylvania, has been fully corroborated by the events of the past year, in spite of the greatest activity in development—the price of oil has advanced from seventy-five cents at that time, to over four dollars, and the amount of stock on hand is being steadily reduced.

The outside boundaries of the region seem to be unquestionably defined, and it only remains for us to glean for the next few years what we may find within, in and by increased cost and labor.

OFFICIAL OIL RETURNS.

Table of returns from parties engaged in the storage and transportation of petroleum oil for the year 1876, made pursuant to the act of 15th May, 1874, to the Bureau of Industrial Statistics of the State of Penn'a

COMPANIES.	Quarter ending March 31, 1876.	Quarter ending June 30, 1876.	Quarter ending Sept. 30, 1876.	Quarter ending Dec. 31, 1876.
	Barrels of 42 Gallons.	Barrels of 42 Gallons.	Barrels of 42 Gallons.	Barrels of 42 Gallons.
American Transfer Co	88,412.55	101,571.80	130,489.71	173,237.54
Do......do....B. Branch,				7,485.09
Antwerp Pipe Co	31,475.37	22,743.75	19,245.82	16,693.08
Atlantic Pipe Line	174,420.57	173,547.53	207,567.01	172,133.10
Charley Run Pipe Co	2,876.00	3,210.00	521.11	1,645.26
Cherry Tree Run Pipe Line	23,658.63	28,233.63	25,892.36	24,542.46
Church Run Pipe Co	3,306.76	5,087.87	4,425.63	3,597.83
Columbia Conduit Co	264,296.12	273,427.28	243,712.73	237,411.30
Conewango Pipe Co			14,219.37	10,112.22
Franklin Pipe Line	6,394.89	7,867.34	8,104.92	9,717.82
Grant Pipe Line Co.	80,333.48	90,478.73	104,046.35	71,512.82
Karns Pipe Line.	59,197.81	72,233.73	116,001.07	109,043.25
Keystone Pipe Co	45,573.94	50,351.04	42,505.61	27,340.25
M'Kean County Pipe Line	15,867.36	33,450.54	42,880.07	62,737.05
N. Y. and Allegheny Oil Co.,	10,166.10	14,114.72	12,816.22	9,954.08
New York Pipe Co.	20,044.41	22,480.49	19,322.86	26,733.77
Octave Oil Co	27,204.73	22,991.19	25,941.95	27,336.02
Oil City Pipe Co	88,248.79	107,830.67	175,936.57	200,569.82
Olean Pipe Line	12,641.91	42,590.74	75,077.96	77,720.93
Pacific Pipe Line			6,360.87	3,844.55
Penn'a Transportation Co.	118,899.93	140,066.52	153,505.02	*7,671.16
Prentice F. & Co.	3,790.16	4,352.35	3,220.20	2,484.50
Relief Pipe Line Co.	62,723.86	48,830.76	64,793.20	61,446.24
Rochester & Oleopolis Oil Co.,	25,924.96	31,127.97	28,525 30	28,249.55
Rouseville Pipe Line			15,072.05	14,614.44
Sage Run Pipe Line.	5,512.51	5,870.46	5,314.77	4,112.92
Shaffer Run Pipe Co.	25,284.00	26,600.00	1,123.11	2,065.21
Smith's Ferry Oil Trans. Co.,	7,401.51	7,377.90	5,007.09	5,074.25
Taft & Payne Pipe Line	12,760.97	13,319.56	14,332.96	10,782.27
Tidioute Oil Pipe Co.	30,183.79	36,636.49	46,348.86	51,295.03
Titusville Pipe Co	26,269.19	30,003.38	31,693.68	26,726.08
Union Pipe Co	353,363.73	352,042.90	344,874.12	344,576.06
United Pipe Lines.	346,054.23	388,900.35	381,211.55	448,525.97
Vandergrift P. & Co's. P. Lines:				
Milton	7,337.78	7,281.56	8,372.72	
Sandy	27,210.83	57,868.33	81,889.22	†92,203.91
Warren Pipe Line.		951.51	11,025.71	11,445.39
Total	2,006,836.89	2,223,441.09	2,471,447.75	2,384,641.22

* Amount returned since the company has passed into the hands of a receiver.

† Milton and Sandy Pipe Lines consolidated.

RECAPITULATION.

For quarter ending March 31st	2,006,836.89	Barrels.
Do........do....June 30th	2,223,441.09	"
Do........do....Sept. 30th	2,471,447.75	"
Do........do....Dec. 31st	2,384,641.22	"
Total	9,086,266.95	"

BITUMINOUS COAL STATISTICS.

Very full reports have been received by this Bureau from the operators in the bituminous coal fields, giving the production and value, together with the number of employees and the amount paid for labor. In no case was the information desired refused, and in this respect the coal operators exhibited a willingness to comply with the provisions of the acts of Assembly, worthy of emulation.

A number of reports were received from persons who were in the coal business only to the extent of mining enough for their own use, and in some cases from manufacturing companies that mined only for the use of the employees. These reports do not appear in our tables.

AMITY & DRAVO WORKS.

J. C. Risher & Co.

Quantity of tons and value in dollars of annual product: 88,500 tons, $123,900.

Whole number of persons employed: Two hundred and twenty-five (225.)

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract..	175				About 9 months.	Paid per bushel, not any. The working time during the year will average about nine months all around. We change men often during the year.
Outside laborers.....	10	5	$2 35	$1 20		
Inside laborers......	2		2 25			
Outside mechanics*.						
Inside mechanics*...						
Outside mule drivers,	4		2 25			
Inside mule drivers..	12		2 50			
Weigh master.......	1		2 25			
Dumpers...........	2		2 00			
Mining overseers....	2		3 00			
Saw mill...........	6		2 25			
Barge yard and repairers, &c.........	6		2 50			

* Included in mining overseers.

Characteristics of Colliery.—Mines situated on the Monongahela river about thirteen miles (13) from Pittsburgh, at an elevation of about two hundred feet (200) above the level of the river.

The thickness of the coal vein is about six feet (6.) We only take out four and one-half feet (4½.)

(Signed) J. C. RISHER & CO.

ROCK RUN COAL WORKS, ALLEGHENY COUNTY.

Culp & Gamble, Coal Valley post office.

Quantity of tons and value in dollars of annual product: About thirty-two thousand tons. Value $43,000.

Whole number of persons employed: About one hundred and twenty-two (122.)

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys.........	Time in operation during year...	REMARKS.
Miners on contract...	90	15	$3 00	$1 50	123 dys	From June 30, 1875, to June 30, 1876. About one-half the lost time is from strikes.
Outside laborers.....	6	......	2 25	......	....	
Inside laborers......	1	......	2 25	......	158 dys	
Outside mechanics...	1	......	2 50	.....	123 dys	
Inside mule drivers,	6	......	2 50	......	123 dys	
Weigh master........	1	......	3 00	......	123 dys	
Dumper..............	1	......	2 25	......	123 dys	
Mining overseer.....	1	......	2 25	......	158 dys	

The weigh master is also the company's book-keeper, and assists in emptying the coal into the crafts on the river, for which his wages are made up to six hundred dollars ($600) per year.

Characteristics of Colliery.—The coal is what is called a four foot vein, and is situate in the hill, at an elevation of about sixty to seventy feet from the water level in the river, and is loaded in wagons by the miners, and run down an incline to the river. Some of the coal needs blasting, but not very much, and is almost entirely free from bad air.

(Signed) JOHN BAXENDELL, Sr.

LOVEDALE COLLIERY.

A. Love, Agent for Robert Woods, Elizabeth, Allegheny county, Pa.

Quantity of tons and value in dollars of annual product: (327,000.) Three hundred and twenty-seven thousand tons, $32,700.

Whole number of persons employed: Average, one hundred and thirteen, (113.)

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year: Seven months, (7.)

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	90				7 mos.	Out of the seven months the diggers on strike about six weeks for an advance.
Outside laborers	6		$2 00		"	
Inside laborers	2		2 00		"	
Outside mechanics	3		2 50		"	
Inside mechanics	2		3 00		"	
Inside mule driver	7		2 00		"	
Weigh master	1		2 00		"	
Dumpers	1		2 50		"	
Mining overseers	1		3 00		"	

Characteristics of Colliery.—Coal very hard to drain as it descends from all points of the surface to swamp or basin, making it expensive to haul and open out the coal.

Coal of No. 1, quality soft. Nature, good gas coal.

A. LOVE, *Agent for Robert Woods.*

PITTSBURGH AND CONNELLSVILLE GAS COAL AND COKE CO.

Quantity of tons and value in dollars of annual product: 96,000 tons coke. Valued at $192,000.

Whole number persons employed: 219.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	100					Averaged mining price $1 09 per H. Hd.
Outside laborers	38		$1 65		12 mos.	
Inside laborers	4		1 65			
Outside mechanics	4		2 16			
Inside mechanics	2		2 95			
Outside mule drivers,		4		75		
Inside mule drivers		6		75		
Weigh master	2		1 95			
Dumpers	2		1 65			
Mining overseers	2		2 10			
* Civil engineers						
Coke drawers	47					On average 60 cents per oven.
Steam engineers	4		2 10			
Locomotive engineer	1		2 10			
Gen'l Superintend't,	2		3 33⅓			
Clerk	1		2 00			

* Occasionally $6 00.

JOHN F. DRAVO, *Manager.*
By JNO. WILHELM, JR.

ISABELLA FURNACE CO.

Etna, Pa.

Quantity of tons and value in dollars of annual product: 60,097 tons, value $39,183.

Whole number of persons employed, 75.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid Men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract...	50	8	......	......	All year.	By the car 35, 45, 50, 55, 60, 65 cents.
Outside laborers.....	3	......	$1 75	......		
Inside laborers	3	1	2 25	$1 00	"	
Outside mechanics ..	3	1	1 50	......	"	
Outside mule drivers,	......	......	......	......		
Inside mule drivers,	5	......	1 75	......		
Dumpers	1	......	2 00	......	"	
Mining overseers	1	......	4 00	......		

GRAFF, BAILEY & GEIT.

OAK RIDGE MINE.

Oak Ridge Coal company, limited, Pittsburg, Pa., post office box 784.

Quantity of tons and value in dollars of annual product: 600 tons, equal to $8,076 48.

Whole number of persons employed: Sixty-one (61.)

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	50	......	$1 00	......	2 mos.	Begun operation November 1, 1875.
Outside laborers.....	3	......	5 00	......	....	
Inside laborers......	1	......	1 75	......	....	
Inside mule drivers,	4	......	6 75	......	....	
Weigh master........	1	......	2 25	......	....	
Mining overseer.....	1	......	3 50	......	....	
Brakeman...........	1	......	2 00	......	....	

Characteristics of Colliery.—This mine is a drift, but a short time in operation, and has natural ventilation.

GEO. W. SCHLUEDERBERG,
Secretary and Treasurer.

COREY'S & CO.'S, BRADDOCKS, PA.

Corey & Co., Braddocks, Allegheny county, Pa.

Quantity in tons and value in dollars of actual product: 479 tons coal, 100 tons nut, $67,000, at Pittsburgh.

Whole number of persons employed: 130.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	70	20			12 mos.	
Outside laborers	8		$1 75			
Inside laborers	1		2 25			
Outside mechanics	3		2 25			
Inside mule drivers,	6		2 00			
Weigh masters	1		2 00			
Dumpers	1		1 75			
Mining overseers	1		3 09			

COREY & CO.

BELLEVIEW COAL AND SALT WORKS.

P. Y. Hite, post office Tarentum, Allegheny county, Pa. Mines at Hite's Station, West Pennsylvania railroad.

Quantity of tons and value in dollars of annual product: 55,000 tons. Value, $65,000.

Whole number of persons employed: about 100 men and boys.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	50	25	2$\frac{3}{4}$c. per bus.		All year.	
Outside laborers	3	1	$1 35 1 65	$10 per mon. 50		
Inside laborers	2	2	1 50 2 00			
Outside mechanics	3		1 85 1 50			
Outside and inside mule drivers	6	2	1, $2 00 5, 1 75			
Weigh master	1		20c per 100 bu.			
Dumper	1		*			
Mining overseers	1		$75 per mon.			
Trimmer on cars	1		†			
Salt boilers	2		1 50			
Boss boilers	1		2 00			
Cooper	1		1 50			
Brakemen on our own cars	2		1 75			

Make about 5,000 barrels salt annually, valued about $5,000.

Characteristics of Colliery.—The entrance to mines is sufficiently elevated as allow the coal to be easily dropped into the cars after passing over a bridge, a distance of some 200 feet from mouth of mine. The coal is a soft bituminous, suitable for manufacturing purposes. Three-fourths of that now being mined is shipped to the large rolling mill of Graff Bennett & Co., at Bennett Station, West Pennsylvania railroad. The mines are in good condition, being well ventilated. The water in the dips and entrys being removed by a steam pump, which is run day and night. The pump is placed in the mine, and the steam being furnished from a boiler which is placed on the outside. Seventy-eight cars are owned by and required for the transportation of the coal, which is rarely shipped off the line of the W. P. R. R.

R. W. ROW,
Clerk.

HORNER & ROBERTS.

Horner & Roberts, Elizabeth, Allegheny county, Pa.

Quantity in tons and value in dollars of annual product: 1,296,000 bushels—about $75,000.

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* Paid by Weigh Master 4 cents per 100 bushels.

† Paid by Weigh Master 6 cents per 100 bushels.

Whole number of persons employed, 233.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid to boys.........	Time in operation during year....	REMARKS.
Miners on contract...	15		$2 75 per yd..		7 mos.	
Miners on wages.....	175		3 c. pr bu.		7 "	
Outside laborers.....	25		1 50 to $2 75		8½ "	
Inside laborers......	2		2 00		7 "	
Outside mechanics ..						Ourselves.
Inside mechanics....	1		2 75		10 mos.	
Outside mule drivers						None.
Inside mule drivers,	10		2 25		7 mos.	
Weigh master........	1		2 50		7 "	
Dumpers	2		2 00		7 "	
Slate pickers........						None.
Mining overseer......	1		3 00		12 mos.	
Civil engineers						Ourselves.
Locomotive engineer					7 mos.	

Have one twelve ton narrow gauge locomotive, built by the Pittsburgh and M'Keesport Car company.

On account of the depression of the southern coal markets this year, we did not run as many months as usual.

HORNER & ROBERTS.

Characteristics of Colliery.—Our works are situate in Elizabeth, Allegheny county. The mines are in Forward township, Allegheny county. The railroad is two miles long, grade fifty feet to the mile, where it strikes the coal on a level, consequently dispensing with an incline plane, (as all other mines have in this section.) We have no trestle work. Use 40℔ T rail and locust sills. Capacity 20,000 bushels per day. Mines are worked on the double entry plan. Air by means of shaft and furnace. The furnace is under a boiler, with which we run a No. 9 Blake pump, which gives entire satisfaction in draining the mines. Coal is six (6) feet strata. Coal lays very level. Have 700 acres of coal. We manage and superintend the works and mines ourselves, consequently are always at home with the employees, and they feel the same toward us, as we mingle all together at school, church and social gatherings.

Very respectfully yours,

HORNER & ROBERTS,
By G. ROBERTS.

KENNY'S COAL WORKS.

A. H. Kenny & Co., Braddock's P. O.

Quantity of tons and value in dollars of annual product: No. of bushels 531,226. Value, $26,561 30.

Whole number of persons employed: average about 50 hands.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men.	Daily wages paid boys.........	Time in operation during year...	REMARKS.
Miners on wages.....	35	10	$1 75 per head	$0 75	About 6 mos.	
Outside laborers.....	10	......	1 50	......	....	
Inside laborers......	5	......	1 50	......	....	
Inside mule drivers,	6	......	1 75	......	....	

A. H. KENNY & CO.

FULTON.

G. & W. Jones, 10 Smithfield street, Pittsburgh.

Quantity of tons and value in dollars of annual product: 32,000 tons. $44,200.

Whole number of persons employed: 85.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys..........	Time in operatian during year...	REMARKS.
Miners on contract..	61	2	$3 00	$1 50	7 mos.	
Outside laborers.....	9	......	2 00	....	....	
Inside laborers......	3	......	2 25	....	....	
Outside mechanics..	1	......	3 00	....	....	
Outside mule drivers,	3	......	2 00	....	....	
Inside mule drivers,	5	......	2 00	....	....	
Weigh master........	1	......	2 50	....	....	

G. & W. JONES.

NATIONAL MINES.

Pittsburg National Coal and Coke company, Fourth avenue and Fry streets, Pittsburgh.

Quantity of tons and value in dollars of annual product: 33,906 tons—$40,000.

Whole number of persons employed: 125 to 150.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	100	......	....	......	....	
Outside laborers.....	3	1	$1 50	$ 85	....	
Inside laborers......	2	......	1 56	......	....	
Outside mechanics...	2	......	2 25	......	....	
Outside mule drivers	4	......	1 75	......	....	
Inside mule drivers,	6	4	1 50	1 25	....	
Weigh master........	1	......	2 00	......	....	
Dumpers............	2	......	1 50 1 70	......	....	
Mining overseers....	2	......	2 75	......	....	

Characteristics of Colliery—Drift mine, vein four and a half to five feet high, with bearing in slate at bottom of about six inches; have been in operation for nine years. Air in pit good; also a good slate roof.

EDWARD FISHER, *Secretary.*

ROBBINS & JENKINS' COAL MINE.

Robbins & Jenkins, M'Keesport, Pa.

Quantity of tons and value in dollars of annual product: 964,666 bushels; $27,330.

Whole number of persons employed: 153 men and 20 boys.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	180	20	$2 50 to 3 00	$1 25 to 1 50	8 mos.	
Outside laborers.....	10	......	2 25	....	11 mos.	
Inside mechanics....	1	......	2 25	....	12 mos.	
Outside mule drivers,	3	......	2 00	....	8 mos.	
Inside mule drivers.	7	......	2 25	....	8 mos.	
Weigh master	1	......	2 75	....	8 mos.	
Mining overseers....	1	......	2 75	....	12 mos.	

In answer to the question, we would say : that men (miners) when working can earn from $2 50 to $3 00 per day, and boys half that amount. For the last two years we have not worked more than half time on account of strikes.

(Signed) ROBBINS & JENKINS.

ENTERPRISE COAL WORKS.

Hartley & Marshall, Pittsburgh, (South side.)

Quantity of tons and value in dollars of annual product: 50,000 tons. Valuation, $52,000.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	100	......	[Average $2 00 for days at work.]	......	Work full 7 mos. in each year. Balance moderately in winter and summer actually stopped.	
Miners on wages.....	100	......	....	......		
Outside laborers.....	2	1	1 50	$0 50		
Inside laborers......	2	2	1 75	50		
Outside mechanics ..	1	......	2 00	......		
Inside mule drivers,	5	......	1 75	......		
Weigh master.......	1	......	2 00	......		
Dumpers	1	......	1 50	......		
Mining overseers....	1	......	2 50	......		

HARTLEY & MARSHALL.

Per Rodger Hartley.

GLOBE MINES.

A. A. Hutchinson & Bro., Pittsburgh, Pa.

Quantity of tons and value in dollars of annual product: 45,600 tons coal manufactured into 31,200 tons coke. Value, $32,000.

Whole number of persons employed: Average, 47.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men............	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on tract......	25	......	$2 00	......	11½ mos	
Outside laborers.....	2	......	1 50	......	....	
Outside mechanics ..	1	......	2 00	......	....	
Outside mule drivers,	2	......	1 85	......	....	
Inside mule drivers,	2	......	1 85	......	....	
Weigh master........	1	......	1 75	......	....	
Mining overseers....	1	......	2 50	......	....	
Superintendent......	1	......	2 50	......	....	
Coke drawers........	12	......	1 80	......	....	

A. A. HUTCHINSON & BRO.

WILLIAM STONE'S COAL WORKS.

Wm. Stone's heirs, M'Keesport, Allegheny county, Pa.

Quantity of tons and value in dollars of annual product: 72,364 tons, valued at $88,659 43.

Whole number of persons employed: One hundred and forty-one (141.)

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid to boys.........	Time in operation during year....	REMARKS.
Miners on contract...	100	10	3 c. per bu.	......	7 mos.	
Outside laborers.....	5	3	$2 00 to $2 75	$1 00	7 "	
Inside laborers	2	......	2 50	......	7 "	
Outside mechanics...	1	......	2 75	......	1 year.	
Inside mechanics....	1	......	3 00	......	7 mos.	
Outside mule drivers	2	......	2 50	......	7 "	
Inside mule drivers,	11	......	2 50	......	7 "	
Dumpers	2	......	2 50	......	7 "	
Mining overseers....	2	......	2 75 & 3 50	......	1 year.	
Book-keeper	1	......	3 00	......	1 "	
Checkman...........	1	......	2 75	......	....	

(Signed) WILLIAM STONE, *Executor.*
Per GEORGE W. STONE.

YOUGHIOGHENY COAL WORKS.

Jas. O'Neil, Boston P. O., Allegheny county, Pa.

Quantity of tons and value in dollars of annual product: 12,062.69 bushels. $52,282 10.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract...	100		3 cts. per bus.		July 14 to August 10.	
Outside mechanics...	1		$2 00			
Inside mechanics....	1		2 00			
Inside mule drivers,	10		2 00			
Weigh master	1		2 00			
Dumpers	2		2 00			
Pit boss.............	1		3 00			
Blacksmith..........	1		2 50			
Checkmen.	2		2 00			
Hitcher and greasers,	2		2 00			
Engineer	1		2 25			
Brakeman	1		2 00			
Loader..............	1		2 00			
Pumper.............	1		2 00			

JAMES O'NEIL.
Per J. A. O'Neil.

Characteristics of Colliery.—100 miners from March 17 to June 5, worked 66 days.

522,477 bushels of coal at 3 cents per bushel		15,674 31
25 laborers at $51 75, for 66		3,415 50
		$19,089 81
45 miners from June 14 to August 10, worked 24 days.		
Mined 65,825 bushels at 3 cents....	1,974 25	
17 laborers $26 00—24 days	864 00	
		2,838 25
85 miners from August 11 to Sept. 27, worked 15 days.		
Mined 77,217 bushels.........................	2,316 51	
20 laborers at $42 00 per day..................	840 00	
		3,156 51

90 miners from October 1 to October 27, worked 18 days.		
Mined 102,332 bushels at 2½ cents	$2,708 30	
20 laborers at $42 00 for 180	756 00	
		$3,464 30
105 miners from Nov. 1 to Dec. 24, '75, worked 42 days.		
Mined 328,418 bushels	9,852 24	
23 laborers 42 d. at $48 per d	2,016 00	
		11,868 24
		40,417 11
Total amount of bushels		1,106,269
At		4½
		$49,782 10
100,000 bushels of coal 2½		2,500 00
		52,282 10

HAMPTON.

Dickson, Stewart & Co., Shoenberger & Co., and C. H. Armstrong, Pittsburgh, Pennsylvania.

Quantity of tons and value in dollars of annual product: $23,701\frac{558}{1000}$ tons; $34,715 25.

Whole number of persons employed: 91.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	75	6			8½ mos.	
Outside laborers	2		$1 50			
Inside laborers	2		2 00			
Outside mechanics	1		2 25			On contract.
Inside mule drivers	2					
Weigh master	1		2 50			
Dumpers		1		$1 25		
Superintendant	1					

Characteristics of Colliery.—Working Pittsburgh vein. Coal is of good quality and free from troubles and roof favorable.

JNO. M'INTYRE,
Secretary.

KEELING & CO.'S COAL MINES.

Joseph Keeling & Co.

Quantity of tons and value in dollars of annual product: 132,000 tons.

Whole number of persons employed: About 389.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men.......	Daily wages paid boys.........	Time in operation during year....	REMARKS.
Miners on wages.....	about *286	....	....	....	about 6 mos.	Rate of wages has varied during the year.
Outside laborers.....	47	6	$2 00	75	6 mos.	
Inside laborers......	20	8	2 00	......	"	
Outside mechanics ..	4	......	2 25	......	"	
Inside mechanics....	2	......	2 25	......	"	
Inside mule drivers,	about 28	....	2 12	......	"	
Weigh master	1	......	2 50	......	"	
Dumpers	2	......	2 00	......	"	
Civil engineers......	†	......	......	......	....	

The number of men and boys in our employ has varied continually, according as to the demand for coal.

The rate of wages has also changed often during the year. The average price paid during the year would range about 70 cents per ton of 2,000 lbs. bituminous coal.

JOS. KEELING & CO.

JEFFERSON COAL WORKS.

Foster, Clark & Wood, M'Keesport, Pa.

Quantity of tons and value in dollars of annual product: Nine hundred and sixty-eight thousand bushels, (76 pounds to the bushel)—$47,418 40.

Whole number of persons employed: Average about one hundred and twenty-one.

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* Including boys. † None regularly employed.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys.........	Time in operation during year...	REMARKS.
Miners on contract...	103	.....	2¾ c. per bu.	....	5½ mo.	
Outside laborers.....	1	......	$2 00	....	10 "	
Outside mule drivers	1	......	2 25	....	5½ "	
Inside mule drivers,	5	2	2 37½	$1 37½	5½ "	
Weigh master.......	1	......	2 50	....	5½ "	
Dumpers.	1	1	2 37½	1 00	5½ "	
Mining overseer.....	1	......	3 00	....	12 "	
Greaser.............	1	......	1 75	....	5½ "	
Blacksmith..........	1	......	2 37½	....	12 "	
Hitcher..............	......	1	....	1 00	5½ "	
Checkman...........	1	......	2 37½	....	5½ "	
Boss driver.........	1	......	3 00	....	12 "	

Characteristics of Colliery.—The coal lies very irregular, and is expensive to work on account of water interfering with the men working. We work our coal by the bushel at different prices during the year. The price I have given you is about the average price; also the amount of men we employ is the average, sometimes we have more and at other times less.

SANFORD C. CLARK.

QUEEN CITY COAL WORKS.

Jehu P. Smith, No. 137 First avenue, Pittsburgh.

Quantity of tons and value in dollars of annual product:

554,041 tons, or about 138,510 tons, value......	$16,621 23
135,985 tons nut, or 33,996 tons, value......	2,719 70
	19,340 93

Whole number of persons employed: About an average of from 40 to 45 men.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract ..	Say 40	2	about $2 50	$1 50	5 mos.	Difficult to give time exact on entry.
Miners wages.......	3					
Outside laborers.....	4		2 25			
Outside mechanics ..	1				about 40 dys	
Inside mule drivers,	1	2	1 50 2 25		5 mos.	
Weigh master........	1		2 25		5 mos.	
Dumpers	1		2 25			
Mining overseers....	1				5 mos.	

JEHU P. SMITH.

PENNEY'S COAL WORKS.

John Penney, M'Keesport.

Quantity of tons and value in dollars of annual product: 26,539 tons.

Whole number of persons employed : Average eighty-two.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	60	*65 15-19			125	
Outside laborers.....	5	2	Av. $2 12	$1 00	125	
Outside mechanics...	1		2 50		276	
Inside mechanics....	1		2 50		125	
Inside mule drivers.	8	1	Av. 2 25	1 50	125	
Weigh master.......		1	†			
Dumpers		1	2 25		125	
Mining overseers....		1	3 00		294	
Pumper		1	3 00		341	

* Average per ton. † One year $1,000.

(Signed) JOHN PENNEY.

I. S. NEEL'S, LOCATED AT GREENFIELD, PA.

I. S. Neel, 10 Smithfield street, Pittsburgh, Pa.

Quantity of tons and value in dollars of annual product: 32,800 tons—$36,900.

Whole number of persons employed: 71.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	58	......	....	......	226 dys.	
Outside laborers.....	4	......	$2 25	......	....	
Inside laborers	3	......	2 25	......	....	
Outside mechanics...	1	......	2 50	......	....	
Inside mechanics....	1	......	....	......	....	
Inside mule drivers,	2	......	1 50	......	....	
Weigh master........	1	......	2 00	......	....	
Dumper..............	1	......	1 75	......	....	

I. S. NEEL.

1. COAL RIDGE MINE. 2. VENTURE MINE. 3. CHESS MINE.

Gray & Bell, 35th Ward, Pittsburgh, Pa.

Quantity of tons and value in dollars of annual product: 93,745 tons. Value, $156,424 26.

Whole number of persons employed: at Coal Ridge, 90 men, 8 boys; Venture, 81 men, 6 boys; Chess Mine, 100 men, 1 boy.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men.........	Daily wages paid men.........	Time in operation during year ...	REMARKS.
* Miners on contract.	80	......	$2 11	80	177	The number of boys employed in mining cannot be estimated. According to the custom in this valley, every man having a boy able to walk to the pit may take him along whenever he pleases.
	71	......	1 53	87	56	
	85	......	2 15	50	260	
Inside laborers	2	......	2 25	......	200	
	3	......	2 25	......	72	
	6	......	1 85	......	260	
Outside mechanics ..	4	......	2 25	......	260	
	2	......	2 12	......	72	
	3	......	2 12	......	260	
Outside mule drivers,	7	......	2 00	......	260	
Inside mule drivers,	1	4	2 00	......	177	In contract for Chess pit.
	2	2	2 00	$1 75	56	
Weigh master.......	1	......	2 50	1 75	296	
	1	......	......	......	56	One at each pit.
	3	......	2 25	......	177	
Dumpers	2	1	1 80	......	56	
	2	......	2 12	80	177	
	3	......	1 60	......	260	
Mining overseers....	3	......	3 00	......	300	One to each pit.
Mining engineers....	1	......	3 33	......	365	Has charge of all mining operation.
Door tenders		3	......	......	177	
		2	......	......	56	
		1	......	......	260	
1 clerk...............	1	......	3 00	......	300	
1 salesman	1	......	2 50	......	300	
1 outside foreman at Chess pit	1	......	3 00	......	300	

Characteristics of Colliery.—1. The coal mines operated by Gray & Bell, are three in number : 1st. The Coal Ridge Mine, situate on the line of the Little Saw Mill Run railroad, about three miles from the city of Pittsburgh. The product from this mine is shipped over the L. S. M. R. R. R. to the Ohio river, thence by river to the south and west. It is opened in the vein known as the Pittsburgh vein ; has a drift opening ; is above water level, and ventilated by a furnace. The quality of coal is good, free open coal, averaging about four feet three inches thick. The drainage is easy. Roads all of L iron, of 15 and 20 pounds per yard.

2. The Venture Mine. This mine is also on the Little Saw Mill railroad, at about three miles from the city of Pittsburgh. The product of this mine is also shipped over the Saw Mill Run railroad to the Ohio river. The peculiar feature of this mine is its extensive drainage openings. For many years the water of this mine was pumped by a large Cameron pump. On coming into the hands of the present operators they opened out drainage entries, whereby all the water from these works is run into a tributary of Chartiers creek. The tipple and outside works of this mine were totally

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This is the average earning per each man for each working day during the year.

destroyed by the flood of July 26, 1874, and owing to the complete prostration of the coal trade, were not rebuilt untill the fall of 1875. This accounts for the small out-put of coal for that year. She is at this time, however, running again to nearly her full capacity.

3. The Chess Mine. The opening, incline plane, &c. of this mine are situate in the 35th ward, Pittsburgh. The product is shipped over a railroad owned by Gray & Bell, to the rolling mills of Painter & Son, Singer, Wenrich & Co., on the south side of the Ohio river. This mine runs steadily all the year, except strikes amongst the miners or iron workers interfere. The coal is of good quality and finds a ready market. Extensive improvements are at this writing being made in this mine. Steam power is being substituted for mule power to do the inside hauling. The drainage and ventilation of this pit stands, in my opinion, a No. 1.

The value of product given includes transportation and loading or tipping, and is what the product has been sold for.

MARTIN GRAY.

STREETS RUN COAL WORKS.

Ithamar D. Risher, Hope Church, Allegheny county, Pa.

Quantity of tons and value in dollars of annual product: 33,333 tons; value, $51,333.

Whole number of persons employed: 125.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men.........	Daily wages paid boys.........	Time in operation during year....	REMARKS.
Miners on contract...	100	......	$2 75	......	104 days.	Men average about $2 75 per day; paid 3 cts per bus.
Outside laborers.....	12	2	2 25	75	250 "	On an average; some more some less.
Inside laborers.......	1	......	1 75	......	321 "	
Outside mechanics...	1	......	3 00	......	233 "	
Inside mule drivers,	5	......	2 00	......	200 "	Same drivers hauled inside and out.
Weigh master........	1	......	3 00	......	300 "	
Dumpers............	2	......	2 25	......	200 "	
Mining overseers....	1	......	3 50	......	300 "	Also acts as inside mechanic.

Boys in mines not employed by me, but go in with their fathers or others. Not having any account with them am not able to give any figures as to number or earnings.

(Signed) ITHAMAR D. RISHER.

M'CABE MINES.

John D. M'Cabe, Will D. Clark, James E. M'Cabe—M'Cabe, Clark & Co., Bridgeville, Allegheny county, Pa.

Quantity of tons and value in dollars of annual product: Only commenced shipping coal in last November.

Whole number of persons employed: About 40 to 45.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	2	......	....	......	5 mos.	
Miners on wages.....	34	......	2½ & 2¾ c. per bu.	......	....	
Outside laborers.....	3	......	$1 50	......	8 mos.	
Outside mechanics...	2	......	1 50	......	8 "	
Inside mule drivers,	2	......	1 50	......	8 "	
Weigh master........	1	......	2 00	......	8 "	
Dumper	1	......	1 50	......	8 "	
Mining overseer.....	1	......	2 50	......	8 "	
Civil engineer.......	1	......	5 00	......	....	

Characteristics of Colliery.—These mines are situated about twelve miles from Pittsburgh, on the Chartiers Valley railroad. The vein is about five and a half feet in thickness, the coal hard and very good, giving entire satisfaction wherever used. The coal is about forty-five feet under surface of bottom land, and is taken out by a slope and steam power. There has been taken out about three acres. It is kept clear of water by steam pump, the well for which makes an excellent air shaft, having it boxed and run high in air for that purpose. There is no gas as yet of any account. On one side of the slope is a pathway for ingress and egress for men and mules. Drainage good, and no complaint about air or water. We are at present working at two headings.

We have one hundred and twenty-three acres of coal, four dwelling houses, store room and station house, a No. 1 tipple, and use Fairbank's scales.

Yours, &c.,

M'CABE, CLARK & CO.

SWISSVALE, OAK HILL AND WILLOW GROVE.

Dickson, Stewart & Co., Pittsburgh, Penn'a.

Annual product 68,400 tons. Value at the mines $72,080.

Average number of persons employed: 197; 135 miners who are paid from $2\frac{1}{2}$ to 3 cents per bushel; 62 other employees who are paid from $1 50 to $2 50 per day.

LOCALITY OF MINES.

Swissdale mines are situated on Penn'a railroad, 8 miles east of Pittsburgh—in operation about six months in the year.

Oak Hill mines, situated on Penn'a railroad 13 miles east of Pittsburgh—in operation about 9 months in the year.

Willow Grove mines, situated 16 miles west of Pittsburgh, on the P., C. & H. L. railway.

MILESVILLE MINES.

Robbins, Lynn & Co., Sunny Side, Pa.

Annual product, 473,683 bushels. Value, $18,000.

Number of persons, 40: employ 3 miners on contract; 22 miners on wages, 3 outside laborers, 3 mule drivers, 1 weighmaster, 1 mining overseer, 7 boys at $1 00 per day. Daily wages paid men, (miners), $2 37—in operation 8 months in the year.

BECK'S RUN AND SIX MILE FERRY.

H. B. Hays & Bro.

Annual product, 100,000 tons. Value, $125,000.

Whole number of persons employed, 400: 312 miners on contract, 5 boys, 25 outside laborers, 5 inside laborers, 5 outside laborers, 5 outside mechanics, 5 inside mechanics, 5 outside mule drivers, 25 inside mule drivers, 2 weigh masters, 5 dumpers, 5 mining overseers, 1 civil engineer. Wages paid men, $2 00 per day. Wages paid boys, $1 00 per day. Time in operation, 200 days.

DUQUESNE MINES.

Duqesne Coal Company, Pittsburgh, Pa.

Our mines have been suspended for some time, and there is no immediate prospect of resumption. Causes of suspension:

1st. Limited demand for coal, owing to the depressed condition of the manufacturing interest in this vicinity, and unremunerative price of coal.

* * * * * * * * *

3d. Oppressive taxation, which I need not enumerate, and legislative interference with the working of our mines.

ALEX GORDON, *President.*

ARMSTRONG COUNTY.

MAHONING MINES.

Mahoning Coal Co., Mahoning, Armstrong county, Pa.

Quantity in tons and value in dollars of annual product: 30,000 tons; $36,000.

Whole number of persons employed: 92.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on wages.....	75	......	$1 50	......	9 mos.	
Outside laborers.....	4	2	1 50	$1 00	"	
Inside laborers......	1	......	2 00	......	"	
Outside mechanics...	1	......	2 25	......	"	
Outside mule drivers,	1	......	1 25	......	"	
Inside mule drivers,	4	......	2 00	......	"	
Weigh master.......	1	......	1 75	......	"	
Bank boys............	.....	3	......	50	"	

(Signed) JAS. VAN HOUR,
Superintendent.

CANNEL COAL MINES.

J. F. Mansfield, Cannelton, Beaver county, Pa.

Quantity of tons and value in dollars of annual product: 15,000 tons—value $24,000.

Whole number of persons employed: 58 men.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys......	Time in operation during year...	REMARKS.
Miners on contract...	43	......	$2 10	......	......	Steady employment year round.
Miners on wages.....	1	......	2 25	......	......	
Outside laborers.....	2	......	1 40	......	......	
Inside laborers......	2	......	1 50	......	......	
Outside mechanics...	1	......	2 25	......	......	
Outside mule drivers	2	......	1 40	......	......	
Inside mule drivers,	3	......	1 50	......	......	
Weigh master.......	1	......	1 75	......	......	
Dumper..............	1	......	1 40	......	......	
Mining overseer.....	1	......	3 00	......	......	
Bank boss............	1	......	2 50	......	......	

Cannel coal is mined from drift opening; vein averaging eight feet in thickness. Two-thirds of the entire output being marketed in New York city for house and gas coal.

Air is supplied by a twenty foot furnace, and water drained by ditches blowed up in the rock bottom.

This mine has only lost fifteen days during the whole year.

(Signed) J. F. MANSFIELD.

AUBURN COAL CO.

D. C. Benham, Rock Point, Beaver county, Pa.

Quantity of tons and value in dollars of annual product: 6,500 tons at $1 60 per ton; amount, $10,400.

Whole number of persons employed: Say 50 when running.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	30	5	*80	......	8 hours per day.	
Outside laborers.....	2	......	$1 50	......	9 "	
Inside laborers......	2	......	2 00	......	9 "	
Outside mechanics ..	1	......	2 00	......	9 "	
Outside mule drivers,	1	......	2 00	......	9 "	
Inside mule drivers,	3	......	1 50	......	9 "	
Weigh master	1	......	1 75	......	9 "	
Dumpers	1	......	1 50	......	9 "	
Mining overseers....	1	......	2 25	......	9 "	
Civil engineers......	42	5	......	......	9 "	

* Per ton.

(Signed) D. C. BENHAM.

BEAVER GAS COAL WORKS.

Messrs. Scott & Co., Rock Point, Beaver county, Pa.

Not in operation during 1875, or at the present time, with no prospect of starting this winter.

E. P. CRAWFORD, *Superintendent.*

BEAVER MINES.

Lee & Patterson, Rock Point, Pa.

Quantity of tons and value in dollars of annual product: 31,830 tons at $1 60, $50,928.

Whole number of persons employed : 92.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract by the ton	70	....	80 cts. per ton, about $2 00 per day.	......	9 mos.	$500 00 for year.
Outside laborers.....	4	....	$1 50	......	1 year.	
Outside mechanics ..	2	....	2 50	......	9 mos.	
Inside mechanics....	3	....	2 00	......	9 "	
Outside mule drivers,	3	....	1 50	......	9 "	
Inside mule drivers,	6	....	1 50	......	10 "	
Weigh master	1	....	1 50	......	9 "	
Dumpers	2	....	1 50	......	9 "	
Mining overseer.....	1	....	3 00	......	1 year.	

This coal is used largely for making gas and for steam purposes.

LEE & PATTERSON.

CLINTON.

Clinton Coal Company, Rock Point, Pa.

Quantity of tons and value in dollars of annual product: 26,955 tons coal; $45,335 07.

Whole number of persons employed: 130.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	80	16	$2 25	$1 20	About 8 months.	
Outside laborers.....	9	.....	1 50	......		
Inside laborers......	2	.....	2 25	......		
Outside mechanics...	3	.....	2 46	......		
Inside mechanics....	1	.....	2 50	......		
Outside mule driver,	......	1	....	75		
Inside mule drivers,	14	.....	1 50	......		
Weigh master.......	1	.....	1 87	......		
Dumper	1	.....	1 50	......		
Mining overseer.....	1	.....	3 50	......		

(Signed) CLINTON COAL CO.

BRADFORD COUNTY.

CARBON RUN.

Schraeder Coal Co., South Bethlehem, Pa. Mines located in Bradford county.

Quantity of tons and value in dollars of annual product : refer you to the Schraeder Coal Co.

Whole number of persons employed : 201.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of men......	Daily wages paid men..........	Daily wages paid men..........	Time in operation during year...	REMARKS.
Miners on contract...	131	......	$2 92	......	Total days worked during year, 229.	
Outside laborers.....	7	......	1 50	......		
Inside laborers......	4	3	1 55	$1 16		
Outside mechanics...	6	......	2 09	......		
Inside mechanics....	3	......	1 95	......		
Outside mule drivers,	2	......	1 65	......		
Inside mule drivers .	10	3	1 72	1 25		
Weigh master........	1	......	2 25	......		
Dumpers.............	4	......	1 65	......		
Slate pickers.........	3	2	1 50	85		
Mining overseers....	2	......	4 50	......		
Civil engineers......	1	......	6 00	......		
Door tenders	......	13	......	85		
Prop sawyers........	2	......	1 65	......		
Loaders..............	2	......	1 80	......		
Choppers	2	......	1 65	......		

(Signed) ROBT. A. ABBOTT,
Supt.

BARCLAY COAL CO.

Towanda Coal Company, Elmira, N. Y.

Quantity in tons and value in dollars of annual product: 178,312 gross tons; $187,220 50, at shutes.

Whole number of persons employed: 415.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	220		*75		280 days.	
Outside laborers	90		$1 62		"	
Inside laborers	33		1 50		"	
Outside mechanics	3		1 90		"	
Inside mechanics	1		1 90		"	
Outside mule drivers,	17		1 65		"	
Inside mule drivers,		17		1 00	"	
Weigh master	2		1 90		"	
Dumpers	17		1 50		"	
Slate pickers	10		1 50		"	
Mining overseers	2		2 85		"	
Civil engineers	1		5 00		"	
G'n'l outside foreman	1		2 50		"	
Locomotive engineer	1		2 50		"	

A. R. CHAMBERLIN,
Superintendent.

BLAIR COUNTY.

MILLER VEIN.

Denniston, Porter & Co., Hollidaysburg, Pa.

Quantity of tons and value in dollars of annual product: 31,000 tons—$31,000.

Whole number of persons employed: From 60 to 75.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	50	10	$1 50	$1 10	12 mos.	
Outside laborers	5					
Inside laborers	3					
Outside mule driver,	1					
Inside mule drivers,	4					
Weigh master	1					
Dumper	1					
Mining overseer	1					

DENNISTON, PORTER & CO.

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* Per ton.

BENNINGTON SHAFT.

Blair Iron and Coal Co., Hollidaysburg, Pa.

Quantity in tons mined, 47,632. Value in dollars of annual product, $38,106.

Employ 100 men. Average wages per day, $2 00.

W. B. BALRICK.

HORSE SHOE.

S. C. Baker, Altoona, Blair county, Pa.

Quantity of tons and value in dollars of annual product: 1,344 tons, $1,344.

Whole number of persons employed: 18 men.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	9	....	$1 25	......	2 mos.	Nov. and Dec.
Outside laborers.....	2	....	1 00	......	....	
Inside laborers	1	....	1 25	......	....	
Outside mechanics...	1	....	1 60	......	....	
Inside mechanics....	....	....	......	......	....	
Outside mule drivers,	2	....	1 25	......	....	
Inside mule drivers,	1	....	1 25	......	....	
Weigh master and dumper..........	1	....	1 50	......	....	
Slate pickers	....	....	......	......	....	
Mining overseers....	1	....	3 20	......	....	
Civil engineers....	....	....	......	......	....	

S. C. BAKER.

HORSE SHOE COAL MINE.

S. C. Baker, Altoona, Pa.

Quantity of tons and value in dollars of annual product: 1,350 tons, $1,350.

Whole number of persons employed: 16.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract..	9		$1 25		About 2 mos.	
Outside laborer......	1					
Outside mechanic....	1		1 60			
Outside mule driver,	1	1	1 50	1 00		
Inside mule driver,	1		1 25			
Weigh master and dumper............	1		1 50			
Mining overseer.....	1		3 20			

(Signed) S. C. BAKER.

LILLY COLLIERY.

Mentzer & Rothrock, Tyrone, Blair county, Pa.

Quality of tons and value in dollars of annual product: 6,720$\frac{18}{20}$ tons. Value, $6,991 16.

Whole number of persons employed: 24.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	12		$1 75		12 mos.	Mostly mined by the ton.
Miners on wages.....	2		1 75			
Outside laborers.....	2	1	1 60	$1 50		
Inside mule drivers,		2		1 75		
Weigh master.......		1		1 75		
Mining overseer.....	1		70 00 per mon.			
Coker...............	1		$1 50			

MENTZER & ROTHROCK.

BENS CREEK.

S. H. Smith and Jno. Reilly, in the name of S. H. Smith & Co., Altoona, Pa.

Quantity of tons and value in dollars of annual product: 9,914 tons in 1875. Value, $9,307 41.

Cannot give the whole number of persons employed, but think an average of 15 about right.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid paid	Daily wages paid boys........	Time in operation during year...	REMARKS.
Miners on contract ..	12	......	About $1 60	......		
Outside mule drivers,	1	......	1 50	......	All the time.	
Inside mule drivers,	1	......	1 50	......		
Mining overseers....	1	......	$70 per mos.	......		

Our accounts have not been kept in such way as to enable us to answer with accuracy. Our business is very small as compared with many others.

(Signed) S. H. SMITH & CO.

CAMERON COUNTY.

MOUNT HOPE COLLIERY.

Jacob Elias, Cameron, Cameron county, Pa.

Quantity of tons and value in dollars of annual product: 10,000 tons; value, $13,000.

Whole number of persons employed: 49.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men.........	Daily wages paid boys.........	Time in operation during year....	REMARKS.
Miners on contract ..	25	......	*50	....	91 days.	
Outside laborers.....	6	3	$1 25 1 00	50	"	
Inside laborer.......	1	1	1 50	$1 00	"	
Outside mechanics ..	2	......	2 00 1 50	......	"	
Inside mule drivers,	2	......	1 25	....	"	
Weigh master.......	1	......	1 33⅓	....	"	
Dumpers............	2	1	1 00	50	"	
Mining overseer.....	1	......	2 50	....	"	
Engineer...........	1	......	1 75	....	"	
Brakemen	2	......	1 25	....	"	
Stable boss	1	......	1 25	....	"	

* Per ton.

Characteristics of Colliery.—The vein worked is known in this region as the Mount Hope vein, has 3½ feet of solid coal from top slate to any underlying bed of fire clay. It is free from any and all impurities, and has no superior as a steam coal, while it is much thought of in this vicinity as a family and blacksmith coal, and has also been successfully used by gas companies, producing from 18 to 18½ candles, 4½ cubic feet of gas per pound, and 42 bushels of coke to the ton of 2,000 pounds.

The mines are located on the property of the Canoe Run estate, situated in Shippen township, Cameron county, and the present drifts represent about 100,000 tons worked coal. They are connected with the old works of the Cameron coal company by a tramway of 2½ miles in length, over which the coal is brought and shipped over an inclined plane and shutes at Cressona, on the Philadelphia and Erie railroad.

The property contains several other valuable veins of coal, one of five feet pure coal, from top to bottom slate, which has been opened, but not yet worked to any extent, and produces a coal similar to that mined at Reynoldsville, and three other veins, varying from three to ten feet. Very extensive beds of iron ore, of a good quality, are also found on the property.

J. C. DAMKELMANN.

CAMBRIA COUNTY.

ROLLING MILL AND BLAST FURNACE COAL.

Cambria Iron Company, Johnstown, Cambria county, Pa.

Quantity of tons and value in dollars of annual product: 211,000 tons. $211,000.

Whole number of persons employed: 399.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during each year:

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	280	....	$1 50 to $1 75	....	12 mos.	P'd by the ton.
Miners on wages.....	......	....	....	....	....	
Outside laborers.....	30	....	1 00 to 1 10	....	....	P'd by the day
Inside laborers......	15	....	1 00 to 1 10	....	....	" "
Outside mechanics...	6	....	1 50 to 1 75	....	....	" "
Outside mule drivers,	......	15	....	$0 65 to $0 75	....	" "
Inside mule drivers,	......	50	....	65 to 75	....	" "
Weigh masters......	2	....	2 00	....	....	" "
Dumpers...........	......	....	....	....	....	
Mining overseer.....	1	....	3 50	....	....	" "
Civil engineers......	......	....	....	....	....	

70,000 tons converted into coke; 45,000 tons used in steel works; 6,000 tons used in calcining ore; 90,000 tons used in rolling mill.

CAMBRIA IRON CO.
Per Geo. A. Bates.

BERTHA MINES.

Cambria Coal and Coke company, South Fork, Cambria county, Pa.

Quantity of tons and value in dollars or annual product: 3,526 net tons; value $2,881 29.

Whole number of persons employed: 25.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	20				113 dys.	
Outside laborer	1		$1 25			
Outside mechanic	1		1 50			
Outside mule driver,	1		1 25			
Inside mule driver	1		1 25			
Weigh master	1		2 50			

The weigh master dumps coal. Slate is picked by the miners.

This company have their own siding, about 1,500 feet, connecting their tipple (or loading station) with the Pennsylvania railroad. At the top of an incline plane (self acting) 1,500 long, with an elevation of 169 feet, the main heading is driven south, along the eastern line of their property about 700 feet at water level. No. 1 cross entry is 300 feet long, running with the rise of seam (35° N. of W.,) leaving the main entry nearly 300 feet from its mouth. From this cross entry eight rooms have been opened.

We are working the "Miller" vein, the average height of which is four feet. Our present capacity 100 tons per day. An air course 6 by 4 feet, running parallel with main entry has been opened and gives sufficient ventilation.

We have been in operation only since August last, (1875,) and in consequence of excessive eastern freights, our product has been but small.

CAMBRIA COAL AND COKE CO.
Per W. C. Orum.

LONG SEAFOLD.

L. Banmer, Johnstown, Cambria county, Pa.

Quantity of tons mined, 1,200. Value of same, $1,200.

Number of persons employed, 2. 1 miner employed at mining at the rate of 70 cents per ton.

L. BANMER.

LILLY VALE COLLIERY.

William Tiley, Hemlock, Cambria county, Pa.

Quantity of tons mined, 30,000. Value of same, $30,000.

Employ 15 men and 2 boys.

Miners on contract, from 5 to 8 ; miners on wages, 2 ; outside laborers, 2 ; inside laborers, 1 ; inside mule drivers, 1 ; mining overseers, 1.

Daily wages paid men, $1 25 to $1 75. Daily wages paid boys, $1 00 to $1 25.

In operation 140 days during the year.

WM. TILEY.

SOUTH FORK COAL WOKRS.

J. Crogle & Co.

Quantity of tons and value in dollars of annual product: 7,000 tons; $7,000.

Whole number of persons employed : 32.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on wages.....	26	......	40c. per ton.	......	$\frac{1}{3}$	
Outside laborer......	1	......	$1 15	......	....	
Inside laborer.......	1	......	2 10	......	....	
Outside mule driver,	1	......	1 15	......	....	
Inside mule drivers,	2	......	1 15	......	....	
Weigh master.......	1	......	1 15	......	....	
Slate picker	1	......	1 15	......	....	
Mining overseer.....	1	......	....	......	....	

The coal fields at South Fork, and the near proximity to the Pennsylvania railroad, with its favorable location in other respects, must in time make it the most valuable coal lands along this road. The capacity of these works is about twelve cars per day, but owing to our being a few miles further west than other coal operators, and so much difference in freight going east, we are shut out of the eastern market, and consequently have only been able to work about one-third of the time. We are working the Miller or white ash vein, and the coal everywhere gives as good satisfaction for steam, heating, engine and all rolling mill purposes as the best in either the Clearfield or Broad Top region. Our principal trade now is in the west, where our coal has been for years put in competition with the Blossburg coal, and proves to be equal to if not superior to that coal for smithing purposes. All the veins of bituminous coal above the conglomerate or six foot vein may be worked at this point without shafting.

The only thing operating against this place is the difference in freight of 20 or 25 cents on the ton going east.

(Signed) J. CROGLE & CO.

SONMAN COLLIERY.

Lilley Station, P. R. R., Cambria Co., Pa.

Dysart & Co.,
Jas. H. Dysart, Altoona.
D. Laughman, Altoona.
W. N. Piper, Phila., 314½ Walnut street.

Quantity of tons and value in dollars of annual product: 43,305 tons. $45,562 95.

Whole number of persons employed: 68.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on wages.....	50	5	$1 90	$1 00	251 days.	
Outside mechanic....	1	....	1 75	.....	....	
Outside mule driver..	1	....	1 75	.....	....	
Inside mule drivers,	4	....	1 75	.....	....	
Weigh master.......	1	....	1 75	.....	....	
Dumpers............	2	....	....	.....	....	
Mining overseer.....	1	....	2 66	.....	....	
Civil engineer......	1	....	3 50	.....	....	
Clerks..............	2	....	$4 00 & $2 50	.....	....	

Sonman collieries are located near Lilley station, P. R. R., Pa., ninety-six miles east of Pittsburgh, and two hundred and fifty-eight miles west of Philadelphia. The "Sonman" coal field consists of a tract of land containing five thousand acres in a connected body. Six veins or seams of coal underlie this whole tract; these deposits are of unusual thickness.

Sections of two seams are now being worked, and the coal is well received in the market, being advantageously used by the largest iron, steel and glass works in the country, and as a *steam generating* coal it has no superior. Messrs. Dysart & Co. are the sole miners and shippers of the celebrated Sonman White Ash Bituminous Coal, which is very *"pure and free from slate,"* and all foreign matter which is generally found in ordinary coal, as will be seen from the following analysis made by Dr. Chas. M. Cresson, of Philadelphia:

Volatile matter	18.30	per cent.
Fixed carbon	78.60	"
Ash	2.70	"
Sulphur	0.40	"

The percentage of sulphur is as low as is found in most cokes in successful furnace use. The ash consists of alumnia, silica and lime. Does not produce a clinker. This coal basin is highly favored, being sufficiently elevated to be worked from the valley by "drift," or "entry," above water level, so that natural drainage follows the simple mining of the coal.

DYSART & CO.

CENTRE COUNTY.

DERBY.

Derby Coal company of Pennsylvania. J. N. Casanova, Philipsburg, Centre county, Pa.

Quantity of tons and value in dollars of annual product: 9,425 tons in April, May and June, average price, $1 net ton.

Whole number of persons employed: About 80.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on wages	60	10	50 c. per ton	50 c. per ton	3 mos.	During the month of May and while the strike lasted, miners were paid 60 c. per ton.
Inside laborers	2		$2 00			
Outside mechanic	1		2 50			
Outside mule drivers Inside mule drivers,	4		5 c. per ton.			
Wegh master	1		$2 00			
Dumper	1		1 50			
Slate picker	1		1 25			In July, the price of coal having come down I shut up the mines.
Mining overseer	1		2 50			
Civil engineer	1		5 00			
Book-keeper	1		2 25			

Characteristics of Colliery.—The Derby vein is four feet ten inches thick, and a test of its quality by Carl Schultz, of New York, gives the following assay:

"I have tried the lump of coal of the Derby Coal company's mine you left with me for examination. The coal proved to be of a semi-bituminous character and showed upon analysis, volatile matter, 19½ per cent; fixed carbon, 75½ per cent.; ash, 5 per cent. The lump was broken up and the pieces were placed upon a coke fire in the small furnace of the Manhattan gas light company. The coal swelled considerably, made a light and bulky coke, and a strong and rapid fire, producing a white heat; the ashes were light and bulky, could be easily removed by a bar and showed no clinker. I think you have found in your new opening, one of the most valuable steam coals in the country, and I hope that the piece left with me may continue to represent the true average quality of your mine.

"CARL H. SCHULTZ."

The property carries three seams of coal above water level, and two below.

The coal is clean and hard and fractures very much like the Maryland coals.

The capacity of the mine is for 400 tons daily, and is not working this year on account of the little profit in coal.

J. N. CASANOVA,
Receiver, appointed by the court.

CUBA COLLIERY.

G. E. Parker, Phillipsburg, Centre county, Pa.

Mined 9,000 tons, valued $8,100; average number of men employed, 10. Wages not stated.

SNOW SHOE—MINES 3 AND 7.

Bellefonte and Snow Shoe Railroad Company.

Quantity of tons and value in dollars of annual product: 81,908 tons; $81,908, or $1 00 per ton at the mines.

Whole number of persons employed: 114.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract ..	76					
Miners on wages.....	3		$2 50			
Outside laborers.....	8		1 37			
Inside laborers	2	4	1 75	$1 62		
Outside mechanics ..	2		2 00			
Inside mule drivers,	15		1 62			
Weigh masters	2		2 25			
Dumpers	4		1 37			
Mining overseer.....	1		2 75			
Civil engineer.......	1					$7 50 for actual time engaged.

(Signed) DANIEL RHOADS,
Gen'l Supt. B. and S. S. R. R.

CLARION COUNTY.

BOSTONIA.

Red Bank Mining Co., New Bethlehem, Clarion county.

Quantity of tons and value in dollars of annual product: 19,206$\frac{16}{20}$ tons; $28,809. This includes amount used by the company, and is counted 2,000 pounds to the ton.

Whole number of persons employed: 75.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys......	Daily wages paid men	Daily wages paid boys...........	Time in operation	REMARKS.
Miners on contract ..	60		$2 50		8 mos.	Wages averaged.
Outside laborers.....	5		1 50	50	“	
Outside mechanics ..	2		2 10		“	
Inside mechanic.....	1		2 15		“	
Outside mule driver,	1		1 50		“	
Inside mule drivers,	2		1 50		“	
Weigh master	1		1 58		“	
Management	3				12 mos.	Pay per year $4,800.

Characteristics of Colliery.—This colliery lies in Armstrong county, 1½ miles from the line of Clarion county, and is connected with the Low Grade division of the Allegheny Valley railroad by a branch road. The specialty of the colliery are the pureness of its gas coals, it having two kinds, cannel and soft, and known in the market as the Red Bank Cannel and Red Bank Orrel. The cannel is superior to the Scotch cannel, and but little inferior to the English cannel, in fact it has superseded the latter coal in the New York market in a number of instances. The colliery is pleasantly located, and the grounds around the work has been tastefully and beautifully laid out, and planted with flowers, trees, etc. The houses erected for the use of the miners are of the better class, and are painted both inside and out, and tastefully built, three or four of them being in the cottage style. Every convience and comfort has been had for their [illegible], and they have been appreciated by men. No strike or other trouble has ever been had, and perfect confidence exist between employer and employed. Men are paid once per month.

RED BANK MINING CO.
Per Richards.

THE PITTSBURGH COAL AND MINING CO.'S WORKS.

The Pittsburgh Coal and Mining Company.

Quantity in tons and value in dollars of annual product: 97,703 tons; $48,850.

Whole number of persons employed: Average about 170.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	3				12 mos.	The wages given as paid is about the average, as wages changed through the year. The miners are part boys. Can't give the number of each kind for the year.
Miners on wages	140		*75			
Outside laborers	5		$1 75			
Inside mule drivers,	8		1 75			
Weigh master	3		1 90			
Dumpers	3		1 70			
Slate pickers	3		1 70			
Mining overseers	3		2 30 to 4 00			

* Per ton.

Four foot vein, bituminous coal.

(Signed) WM. D. MULLIN,
Superintendent.

MONTEREY, J. M'CALLUM, OIL CITY, OWNER.

S. Sherwin & Son, West Monterey, Clarion county, Pa.

Quantity of tons and value in dollars of annual product: 31,300 tons, at $1 20 at the mines, $37,560.

Number of persons employed: Ninety-six all told, men and boys.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys....	Time in operation during year....	REMARKS.
Miners on contract...	70	3	$1 75	$1 00	About nine-tenths of full time.	
Miners on wages.....	3	......	1 75	....		
Outside laborers.....	5	......	1 50	....		
Inside laborer.......	1	......	....	....		
Outside mechanics ..	2	......	2 00	....		
Inside mule drivers,	5	......	1 75	....		
Weigh master.......	1	......	1 75	....		
Dumper.............	1	......	1 50	....		
Slate pickers.........	3	......	1 50	....		
Mining overseer.....	1	......	2 50	....		
Civil engineer........	1	......	5 00	....		

Characteristics of Colliery.—The Monterey colliery is situated on the Allegheny railroad, at West Monterey, Clarion county, and is the third vein or C vein, and is from two feet six inches to three feet in thickness, and has been in operation about six years, and the three last years by S. Sherwin & Son. There is two hundred acres of the property.

S. SHERWIN & SON.

MINERAL RIDGE.

T. J. Skidmore, Fredonia, Chautauqua county, N. Y.

Quantity of tons and value in dollars of annual product: 60,000. Amount, $75 to $90,000.

Whole number of persons employed: 185.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year ...	REMARKS.
Miners on wages.....	140	......	$2 00	......	Full time.	General full time, except holidays and Sunday.
Outside laborers.....	60	......	1 25	......	"	
Inside laborers......	14	......	1 25	......	"	
Outside mechanics ..	2	......	2 25	......	"	
Inside mechanics....	2	......	2 50	......	"	
Inside mule drivers,	10	......	1 00	......	"	
Weigh master.......	1	......	2 00	......	"	
Dumper	1	......	1 25	......	"	
Slate pickers	2	......	1 25	......	"	
Mining overseers....	2	......	2 75	......	"	
Civil engineer.......	1	......	4 50	......	"	
....	......	4	1 50	75	"	

2 bookeepers, one at $4 00 per day and one at $3 00 per day.

(Signed) F. E. COAKE.

FAIRMOUNT COAL COMPANY.

J. M. Brinker, Manager, New Bethlehem, Clarion county.

Quantity of tons and value in dollars of annual product: 54,186 tons. $79,741 88.

Whole number of persons employed : 93.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	Mo. of men.....	No. of boys....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract...	62	....	$1 50	......	Full.	
Miners on wages....	....	10	......	$1 00	"	
Outside labors.......	4	1	1 75	......	"	
Inside laborers	2	....	1 75	......	"	
Outside mechanic ...	1	....	2 25	......	"	
Outside mule drivers	2	....	1 50	......	"	
Inside mule drivers,	6	....	1 75	......	"	
Weigh master.	1	....	2 25	......	"	
Dumper	1	....	1 50	......	"	
Slate pickers.........	....	....	......	......	......	
Mining overseer	1	....	......	......	"	
Civil engineers	....	....	......	......	......	
Manager.............	1	....	......	......	"	
Book keeper.........	1	....	......	......	"	

(Signed) J. M. BRINKER, *Manager.*

CLEARFIELD COUNTY.

FRANKLIN.

Kittanning Coal company, mines located in Clearfield county. No. 125 South Fourth street, Philadelphia.

Annual product: $91,619\frac{9}{20}$ tons.

Whole number of persons employed: 206.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	128	25	$2 75	......	12 mos.	
Outside laborers.....	9	......	1 62	......	....	
Inside laborers......	6	5	1 87	$ 62	....	
Outside mechanics...	4	.....	2 37	......	....	
Inside mechanics....	3	......	2 00	......	....	
Outside mule driver,	1	......	1 62	......	....	
Inside mule drivers,	22	......	1 62	......	....	
Weigh master.......	1	......	2 25	......	....	
Mining overseer.....	1	......	....	......	....	
Civil engineer.......	1	......	....	......	....	

J. R. CAMERON,
Manager and Mining Engineer.

BEAVER COLLIERY.

Kittanning Coal Company, 125 South Fourth street, Philadelphia.

Annual product: $5,424\frac{4}{20}$ gross tons.

Whole number of persons employed: 20.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract ..	10	4	$2 75	......	Parts of 6½ months.	
Outside laborer......	1	......	1 75	......		
Outside mechanic....	1	......	2 00	......		
Inside mule drivers,	2	......	1 50	......		
Weigh master.......	......	1	......	$1 00		
Mining overseers....	1	......	2 75	......		

(Signed) J. R. CAMERON,
Manager and M. E

PHILADELPHIA COLLIERY.

Osceola Mills, Clearfield county, Pa.

Kittanning Coal Co., Philadelphia.

Annual product: $532\frac{4}{20}$ gross tons.

Whole number of persons employed: 16.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	12		$2 75		2 mos.	
Outside laborers	2		1 62			
Inside laborers	2		1 87			

(Signed) J. R. CAMERON,
Manager, &c.

TUNNEL HILL COLLIERY.

Kittaning Coal Co., No. 125 S. 4th street, Philadelphia.

Annual product: $10{,}032\frac{6}{20}$ gross tons.

Whole number of persons employed: 54.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	34	8	$2 75		9 mos.	
Outside laborers	1		2 00			
Inside laborers		2		$0 50		
Outside mechanic	1		2 00			
Inside mechanic	1		1 75			
Inside mule drivers,	4		1 50			
Weigh master	1		2 00			
Mining overseer	1					
Civil engineer	1					

(Signed) J. R. CAMERON.

MORRISDALE MINES.

Located at Morrisdale, Clearfield county.

Morrisdale Coal Co.

Quantity of tons and value in dollars of annual product: 105,940$\frac{800}{2240}$ tons; $90,381 59.

Whole number of persons employed: 150.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract ..	120	......	......	......	12 mos.	Twelve months.
Outside laborers.....	9	......	$1 40	......	....	
Outside mechanics ..	3	......	2 00	......	....	
Outside mule driver,	1	......	1 60	......	....	
Inside mule drivers,	12	......	1 50	......	....	
Weigh masters......	2	......	1 50	......	....	
Dumper..............	1	......	1 40	......	....	
Slate picker.........	1	......	1 00	......	....	
Mining overseer.....	1	......	3 00	......	....	

The Morrisdale Coal Company were the owners of these mines, and carried them until the 31st December, 1875.

On the 1st January, 1876, there was a change, and the business is now conducted and carried on by the undersigned.

R. B. WIGTON,
Office 208 *S. Fourth st., Phila.*

READING COLLIERY.

Richard I. Hughes & Co., Osceola Mills, Clearfield county, Pa.

Annual product, 30,000 tons: Value, $25,000.

Whole number of persons employed: 45, and thus classified:—41 miners on contract, who mine for 40 cents per ton; 1 outside laborer, at $1 40 per day; 1 outside mule driver, at $1 40; 1 inside mule driver, at $1 40, and 1 mining overseer, at $2 40.

In reply to your enquiry as to wages at the mines in the "Clearfield district," I will say that it is rather a difficult matter to answer, but I will, however, state that this basin is worked on two seams: first, up Moshannon creek, 4′ 6″ to 5′ 6″ height; second, Osceola and east thereof 4′. A miner will make the better tonnage in the larger vein. This section like most other mining regions is crowded with persons over twenty-one years of age, who never having been brought up to this business, but desirous of obtaining employment at any rate, venture at mining. They cannot compete with regular Cornish miners accustomed to this work from infancy. Miners drawing pillars are able to earn 25 per cent. more than those working in rooms or breasts. A miner and his boy of say 12 to 15 years of age, has the advantage over two men in a room.

Comparative statement of earnings per day :

First class miner will mine 6 tons @ 40 cents		$2 40
Less oil and sharpening pick		20
Net earnings		2 20
Second class, 4 tons @ 40 cents		$1 60
Less powder, etc		15
Net		1 45
Third class, man and boy, say 7 to 8 tons	$2 80 to	$3 20
Less powder, etc	20	20
	2 60	3 00
Boy's pay	50	50
Net earnings	2 10	2 50

The rate per ton was reduced from 50 cents to 40 cents for mining, October 1, 1876.

RICHARD I. HUGHES.

EUREKA, MAPLETON AND GOSS RUN, CLEARFIELD COUNTY.

Berwind, White & Co., Philadelphia.

Quantity of tons and value in dollars of annual product: $130{,}540\frac{6}{20}$; value about $150,000.

Whole number of persons employed : 245 on an average, when working.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of boys	Daily wages paid men	Daily wages paid boys............	Time in operation during year....	REMARKS.
Miners on contract...	200	......	*50c per ton	......	About 10 months.	Includes boys who work with their fathers.
Outside laborers.....	3	2	$1 75	$1 00		
Inside laborers	......	5	....	62½		
Outside mechanics...	2	......	2 00	......		
Outside mule drivers	3	......	1 75	......		
Inside mule drivers,	16	......	1 75	......		
Weigh masters	3	......	2 50	......		
Dumpers	3	......	1 75	......		
Mining overseers	2	......	$1,300 per year.	......		
Roadmen............	3	......	$2 00	......		
Stable men..........	2	......	1 75	......		

* At 50 cents per ton miners will earn on an average about $3 00 per day.

Characteristics of Colliery.—The collieries are all above water level. Coal mined on usual room and pillar system.

Miners work generally on contract. Coal produced is what is termed Clearfield bituminous—well adapted for steam generating purposes as well as for heating, blacksmithing, &c.

BERWIND, WHITE & CO.

ELK COUNTY.

NORTH-WESTERN MINING AND EXCHANGE COMPANY—LATE DAGUSCHAHONDA.

North Western Mining and Exchange company, C. R. Early, General Superintendent, Ridgway, Elk county, Pa.

Quantity of tons and value in dollars of annual product: 7,671 tons, worth at mines $11,506.

Whole number of persons employed: 53.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	38	......	65 c. per ton	......	5 mos.	
Outside laborer......	1	......	$1 75	......	5 "	
Inside laborer.......	1	......	1 75	......	5 "	
Outside mechanic...	1	......	2 50	......	5 "	
Outside mule driver,	1	......	1 25	......	5 "	
Inside mule drivers,	6	......	1 50	......	5 "	
Weigh master.......	1	......	1 25	......	5 "	
Dumper..............	1	......	1 50	......	5 "	
Mining overseer.....	1	......	3 00	......	5 "	
Engineers, (pump)..	2	......	1 60	......	5 "	

The mines were operated but about five months during the year 1875, and consequently the product has been very small; they have been running nearly full time during the year 1876.

(Signed) C. R EARLY,
Gen. Sup't of N. W. M. and E. company.

ST. MARY'S, ELK COUNTY, PA.

St. Mary's Coal Company, Williamsport, Pa.

Quantity of tons and value in dollars of annual product: 94,468 tons. $141,711 75.

Whole number of persons employed: 123.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on wages.....	102	......	$2 00	......	......	
Outside laborers.....	5	......	1 50	......	......	
Outside mechanics...	2	......	2 25	......	......	
Outside mule drivers	3	......	1 50	......	......	
Inside mule drivers,	4	......	1 25	......	......	
Weigh masters......	2	......	1 50	......	......	
Dumpers	2	......	1 50	......	......	
Mining overseers....	3	......	3 25	......	......	
Car oiler............	......	1	......	$0 60	......	

(Signed) J. B. CORYELL.

FAYETTE COUNTY.

FRICK MINES AND HENRY CLAY MINES.

Frick & Co , Broad Ford, Fayette county, Pennsylvania.

Quantity of tons and value in dollars of annual product: 50,000 tons; $60,000.

Whole number of persons employed: About 130.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on wages.....	50		About $1 50		*	
Outside laborers.....	10		1 25			
Inside laborers	2		1 50			
Outside mechanics ..	4		1 75			
Outside mule drivers,	4		1 40			
Inside mule drivers,	7		1 40			
Weigh masters	2		1 65			
Mining overseers....	2		2 00			
Coke drawers........	50		1 80			

*Greater portion of year. Some months very brisk, other months very little doing.

We manufacture very near all the coal we mine into coke.

FRICK & CO.

UNIONDALE COKE WORKS.

T. W. Watt & Co., Dunbar, Pa.

Quantity of tons and value in dollars of annual product: About 23,000 tons; about $28,000.

Whole number of persons employed: From 45 to 50.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid men..........	Time in operation during year....	REMARKS.
Miners on contract...	18					25, 33 and 60 cts per wagon.
Outside laborer	3	1	$1 75	$ 35		
Inside laborer.......	1		1 25			
Outside mechanics...	1		1 75			Blacksmith.
Inside mule drivers,	3					4 cts per wagon.
Weigh master..	1		1 75			Weigh master dumps the coal.
Mining overseer.....	1		2 50			
M'ch engineers......	3		1 25 2 00 2 25			

This is about the regular amount of work done in 1875. We were stopped a portion of the time by miners' strikes, and a flood in July, so that last year's product would not come up to this report.

Characteristics of Colliery.—The works are located on the line of two railroads—the South West Pennsylvania railroad and Baltimore and Ohio railroad, or Fayette County Branch of Baltimore and Ohio. The coal is hauled out of the mines with machinery, mines being on a slope of about one foot in ten, as all mines are on Fayette County Branch railroad. No coal is shipped from these mines, as the coal is used for making coke.

(Signed) T. W. WATT & CO.
W. T. RIED, *Supt.*

TYRONE MINES, BROADFORD, FAYETTE COUNTY.

Laughlin & Co., Pittsburgh.

Quantity of tons and value in dollars of annual product: 39,637 tons—value, $49,546.

Whole number of persons employed: 44.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	Wages per day equal to.........	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	20	$1 50 to 2 25	Nearly all the work is done by contract or by the ton.	....	Six days every week throughout the year.	
Outside laborers.....	4	$1 35 to 1 80		....		
Inside laborer.......	1	2 25		....		
Outside mechanic....	1	2 00		....		
Outside mule driver,	1	....		....		
Inside mule drivers.	4	1 55		....		
Weigh master	1	2 00		....		
Mining overseer.....	1	3 00		....		
Coke oven drawers..	11	1 30		....		

The entire product of mine is used for the manufacture of coke. The coking operation is conducted at the mouth of mine in "bee hive" ovens, of which we have about 115.

(Signed) LAUGHLIN & CO.

WASHINGTON COAL MINES.

Cochran & Strickler, Broadford, Fayette county, Pa.

Quantity of tons and value in dollars of annual product: 11,612 tons of coal manufactured into coke, producing 7,112½ tons of coke when manufactured, amounting to $7,399 38. 192½ tons of coal for custom use, amounting to $177 10. Total, $7,576 48.

Whole number persons employed: 19.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	8	......	......	.....	10 mos.	The whole amount paid to miners on contract, $2,874 59.
Miners on wages.....	......	......	......	......	....	
Outside laborer......	1	......	$1 50	......	....	
Outside mule driver,	1	......	1 80	......	....	
Inside mule driver .	1	......	1 80	......	....	
Weigh master	1	......	1 80	......	....	
Mining overseer.....	6	......	......	......	....	The whole amount paid for drawing coke ovens, $1,888 80.
Superintendent......	1	.....	1 87½	......	....	

COCHRAN & STRICKLER.

CARONDELET.

Frazer & Frye, Fayette City, Fayette county, Pa.

Quantity in tons and value in dollars of actual product: 43,596 tons, at 62½ cents, $27,436 48.

Whole number of persons employed: 69 men.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men...........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	56	......	62½ per ton	......	11 mos.	
Outside laborers.....	4	......	$2 10 day...	......	"	
Inside laborer.......	1	......	2 50 "	......	"	Pit boss.
Outside mechanics ..	2	......	2 00 "	......	"	Loader and pumper.
Outside mule driver,	1	......	2 00 "	......	"	
Inside mule drivers,	4	......	2 00 "	......	"	
Weigh master.......	1	......	2 00 "	......	"	
Dumper.............	1	......	2 00 "	......	"	

Characteristics of Colliery.—We mine six feet of bituminous coal. We have our main entry through the hill from point to back; four openings in the front of the hill, two on the side and two back, giving us an overabundance of fresh air all the time; very little water.

Main and dark entries laid with T rail. Our mine is kept in first-class order all the time. Employ only a systematic pit boss, who has the exclusive supervision over all the inside work; competent civil engineer.

Our mine is located in pool No. 4, about three-fourths of a mile above Fayette City. Ship by water only (Monongahela river.)

FRAZER & FRYE.

CLIPPER.

J. W. Clarke, Bellevernon, Fayette county, Pa.

Quantity of tons and value in dollars of annual product: 21,947 tons; $38,407 53.

Whole number of persons employed: 51.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	40	......	2¼ cents per bus.	....	7 mos.	
Outside laborers.....	3	......	$1 40	......	8 "	
Inside laborers	2	......	1 50	......	10 "	
Inside mule drivers,	2	6	1 75	$1 40	7 "	
Weigh master........	1	......	2 25	......	7 "	
Dumpers	2	......	2 00	......	7 "	
Mining overseer	1	......	2 25	......	10 "	

Characteristics of Colliery.—Clipper mines opens on river front; mouth of pit 72 feet above water level; 6 feet vein; incline railroad to river 200 feet long.

J. W. CLARKE.

BOWMAN & HOGG OWN THE COAL AND GROUND.

John S. Cunningham & Co., Brownsville, Pa.

Quantity in tons and value in dollars of annual product: 20,962 tons of 2,000 pounds; price 50 cents per ton at an average to the miners, loaded into our wagons in the hill.

Whole number of persons employed: From 40 to 80.

We have our coal hauled by drivers, at $1 75 per thousand bushels.

We have our coal weighed and loaded into flats, barges and coal boats, at $1 75 per thousand bushels.

Average price to miners, mining overseer and weigh-man, $2 per day while we are at work, say from six to eight months each year. Average price of outside laborers and mule drivers, $1 50 per day.

Good 6 to 6½ feet vein of merchantable coal and a good rock roof.

We pay ⅝ cent per bushel coal lease to Bowman & Hogg. Average price of coal loaded in barges here, from 3¼ to 3½ cents per bushel, or 81¼ to 87½ cents per ton of 2,000 pounds. Four months' notes to our order for pay. Cash price, ¼ cent less per bushel.

(Signed) JOHN S. CUNNINGHAM & SON.

STERLING MINES.

Brown & Cochran, Dawson, Fayette county, Pa.

Quantity of tons and value in dollars of annual product: 100,000 tons. Value, 1¼, $125,000.

Whole number of persons employed: 250.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	100		$1 75		12 mos.	
Outside laborers.....	115		1 50			Including coke burners.
Outside mechanics...	5		2 00			
Inside mechanics....	5		1 75			
Outside mule drivers	5		1 25			
Inside mule drivers,	15		1 50			
Dumpers	3		1 50			
Mining overseers....	2		2 50			

Characteristics of Colliery.—Coal from the sterling mines (three in number) is all manufactured into coke for furnace fuel. Our company have 444 coke ovens, situated about 3 miles from Connellsville. Product is consumed principally in the Shenango Valley. Prices are ruled by market of pig metal. Weight of coal 76 lbs. Gains in coking, 25 per cent. in bulk. Weight of coke, 40 lbs.

BROWN & COCHRAN,
Per J. R. Laughrey.

MOUNT BRADDOCK COKE WORKS.

Hogsett, Watt & Co., Braddock P. O., Pa.

Quantity of tons and value in dollars of annual product: coke, 30,000 tons. Value, $35,000 43.

Whole number of persons employed: 75.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract	30		$1 75		12 mos.	
Outside laborers	25		1 50		"	
Inside laborer	1		2 00		"	
Outside mechanics	3		2 00		"	
Outside mule drivers	2		1 75		"	
Inside mule driver	5		1 50		"	
Dumper	1		1 50		"	
Mining overseers	2		2 25		"	
Coke tenders		6		$1 00	"	

HOGSETT, WATT & CO.

SPRING GROVE.

Cochran & Keister, Dawson station, Fayette county, Pa.

Quantity of tons and value in dollars of annual product: 36,000 tons coal. Value, $25,000.

Whole number of persons employed: 52.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men.....	No. of boys.....	Average daily wages paid men,	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on wages	25		$1 50		12 mos.	
Outside laborers	20		1 50		"	
Inside laborer	1		2 00		"	
Outside mechanic	1		2 00		"	
Outside mule driver,	1		1 50		"	
Inside mule drivers,	3		1 75		"	
Mining overseer	1		2 00		"	

COCHRAN & KEISTER.

TREMONT.

J. W. Clarke, Bellevernon, Fayette county, Pa.

Quantity of tons and value in dollars of annual product: 20,362 tons; value $35,633.

Whole number of persons employed, 64.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	55	......	2½ cents per bus.	....	6 mos.	
Outside laborers.....	2	......	$1 33	......	7 “	
Inside laborer.......	1	......	1 50	......	12 “	
Inside mule drivers,	2	4	1 60	$1 32	8 “	
Weigh master........	1	......	2 20	......	7 “	
Dumpers............	2	......	2 00	......	7 “	
Mining overseer.....	1	......	2 50	......	11 “	

Characteristics of Colliery.—Tremont mines open on river front; mouth of pit 66 feet above water level; 6 feet vein; incline railroad to river 200 feet long.

J. W. CLARKE.

SUMMIT MINES.

Hurst, Moore & Co., Broadford, Fayette county, Pa.

Quantity of tons and value in dollars of annual product: 36,000 tons, value, $24,000.

Whole number of persons employed: 47.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid to boys........	Time in operation during year....	REMARKS.
Miners on wages.....	20	......	$1 50	......	9 mos.	
Outside laborers.....	20	......	1 75	......	....	
Outside mechanic....	1	......	2 25	......	....	
Outside mule driver,	1	......	1 25	......	....	
Inside mule drivers,	4	......	1 75	......	....	
Mining overseer.....	1	......	2 25	......	....	

(Signed) HURST, MOORE & CO.

EXCELSIOR COAL WORKS.

Jacobs & Bortner, D. Bortner operating, Fayette City, Fayette co., Pa.

Quantity of tons and value in dollars of annual product: 2,432 tons. Value, $2,128 17.

Whole number of persons employed: 34.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men.	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on wages	30	......	$0 62½ per ton.	.. ...	10 mos.	
Inside mule drivers,	2	......	2 00 per day.	......	....	
Weigh master	1	......	2 00	......	....	
Mining overseer	1	......	2 00	......	....	

(Signed) DANIEL BORTNER.

ROSTRAVER COAL WORKS.

J. W. Clarke & D. M'Aleer, Bellevernon, Fayette county, Pa.

Quantity of tons and value in dollars of annual product: 160,000; $280,000.

Whole number of persons employed: 70.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on wages	61	......	$2 00	......	6 mos.	
Outside laborers	2	......	2 00	......	"	
Inside mule drivers,	4	......	2 00	......	"	
Weigh master	1	......	2 00	......	"	
Dumper	1	......	2 00	......	"	
Mining overseer	1	......	2 00	......	"	

Rostraver mines opens on river front; mouth of pit 200 feet above water level; 5 feet vein; incline railroad to river, 625 feet long.

CLARKE & M'ALEER.

Lowrison & Stauft, Scottdale, Pa.

Quantity of tons and value in dollars of annual product: 1,461 tons coke; value, $1,826.

Whole number of persons employed: 13.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract ..	5	......	$1 50	......	....	
Outside laborers.....	5	2	1 40	$ 75	....	
Inside mule driver...	1	......	1 60	......	60 days.	

(Signed) LOWRISON & STAUFT.

RUTHERFORD MINES.

J. Rutherford.

Quantity of tons and value in dollars of annual product: 650,000 bushels=26,000 tons, @ $1, $26,000 at the mine.

Whole number of persons employed: 45.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract...	35	4	2½ cts. per bus.	......	9 mos.	Boys work with their parents generally.
Outside laborers.....	2	......	$2 00	......	9 "	
Outside mule drivers Inside mule drivers,	2	......	2 50	......	9 "	
Weigh master	1	......	2 50	......	9 "	
Mining overseer.....	1	......	2 50	......	11 "	

Mine situated in Jefferson township, Fayette county, Pa. Vein 7½ feet thick and lies nearly level, and is about 35 feet above the level of the river. The hill is bluff and comes to the river, the pit mouth being but a few steps from the tipple. There are 22 dwelling houses on the place, and most of the miners have good gardens.

JAMES RUTHERFORD.

JOSEPH TURNBULL & CO., COAL WORKS.

Fayette City, Fayette county, Pa.

Annual product: 16,000 tons. Value of same, $16,000.

Whole number of persons employed: 40.

Wages paid men, $2 00 per day.

Time in operation, from April to December.

JOHN HALL.

FULTON COUNTY.

WISHARTS.

David Horton, Will's Tannery, Fulton county, Pa.

Quantity of tons and value in dollars of annual product: 160 tons. Value, $240.

Whole number of persons employed: 2.

This colliery is situated on the south side of the Broad Top coal fields, in Wills township, Fulton county, from four to five miles from the Broad Top railroad. The mine is worked only during the fall and winter months. The coal is taken away by *teams*, there not being any railroad convenient for transporting the same. The vein that is being worked is a clear four foot *vein*, taken out by a small hand *car*. The coal is good for all purposes.

H. S. WISHART.

GREENE COUNTY.

COAL BANKS IN GREENE COUNTY.

JAMES R. RHODES, WAYNESBURG.

Not in operation.

O. W. & JOHN MINER, MAPLETOWN.

Mined for home use 1,891 bushels. Employed three persons. Paid three cents per bushel for mining.

JOHN & GEORGE NIXSON, RYERSON'S STATION.

Mined 88 tons, valued at $110 00.

DAVID CRAMP, WAYNESBURG.

Mined 1,000 bushels, valued at $50.

GREENE COUNTY POOR HOUSE.

Elijah Adams, steward, reports that he mines six or seven thousand bushels of coal for use of poor house.

DAVID CRAGO'S COAL BANK, CARMICHAEL, PA.

Mined 3,000 bushels, valued at $105 00.

SINE COLLIERY, JAMES A. SINE, MT. MORRIS.

Mined 100 tons, valued at $100.

MAPLETOWN COLLIERY, HENRY DEBOLT, MAPLETOWN.

Mined 800 tons, valued at $800. Vein of coal, 5 feet. Coal placed upon yard by the common wheelbarrow. Paid for mining, two cents per bushel. Sold coal at yard for four cents per bushel of eighty pounds.

CLEMENT CURTIS, CARMICHAEL, PA.

Mined 160 tons, valued at $160.

GREGG'S COAL WORKS, JAMES K. GREGG, CARMICHAEL, PA.

Mined 192 tons, valued at $49 76. Thickness of vein, five feet.

ELLIS STEVENS COLLIERY, GREENSBORO', PA.

Mined 600 tons, valued at $375. Don't ship any coal—depend upon local market for sale of it.

O. & J. B. M'CLURE, MT. MORRIS, PA.

We have coal but no market, nor any way of transportation, being ten miles from river and twenty-five miles from a railroad. We have a steam saw-mill, and mine about 3,000 bushels of coal, which is used for generating steam. We sell no coal.

JACOB STONE, CARMICHAEL, PA.

Thickness of vein worked, five feet; sold no coal in 1873 and 1874. The low price of coal will not pay for working the bank.

JOHN GUSAMAN, CARMICHAEL, PA.

Mine from 1,200 to 1,400 bushels per annum. Carmichael, a small country town, is our market, and there being some twenty coal banks in the vicinity, the sales of any one bank are therefore limited. A portion of the year only I employ one or two men.

DAVID BEVAN, CARMICHAEL, PA.

Mine about 3,000 bushels. Dig the coal myself.

SOLOMON HICKMANS, JEFFERSON, PA.

Mine about 300 bushels for my own use. Thickness of vein, 6 feet.

MILLER CRAYNE, LIPPINCOTT, PA.

Mine about 1,000 bushels, valued at $40; employ no miners.

HUNTINGDON COUNTY.

CUMBERLAND.

Richard Langdon, Huntingdon, Pa.

Quantity of tons value and in dollars of annual product: 18,000 tons. Value, $18,000.

Whole number of persons employed: 41 men and boys.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men.....	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	37		50c. per ton.		12 mos.	
Inside mule drivers.	3		$1 30			
Weigh master.......	1		1 35			

I manage the mine myself.

(Signed) RICH. LANGDON.

BLAIR, HOWE & BARNET COLLIERIES.

Robert U. Jacob & Co., 337 Walnut street, Philadelphia, Pa.

Quantity in tons and value in dollars of annual product: 20,568 tons of 2,000 lbs.; valued at about $24,000.

Whole number of persons employed: Say from about 50 to 80.

It is almost impossible to give any correct information, as doing a small and very irregular business the same men often performed different kinds of labor, and our pay rolls do not show it.

Barnet colliery only worked until August, when leased expired. Blair & Howe collieries leases commenced in March.

The firm of Robert U. Jacob & Co. retired from business January 1, 1876.

ROB'T U. JACOB & CO.

1. FISHER COLLIERY.

Broad Top, Huntingdon Co., Pa.

2. EXCELSIOR COLLIERY.

Houtzdale. Clearfield Co., Pa.

*1. Thos. Fisher, H. G. Fisher, T. C. Fisher and R. A. Miller, as Fishers & Miller, owners and operators of Fisher Colliery.

†2. H. G. Fisher, T. C. Fisher and R. A. Miller, as Fisher Bros. & Miller, owners and operators of Excelsior Colliery.

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*1. Signifies Fisher Colliery. †2. Signifies Excelsior Colliery.

Post office address of both firms, Huntingdon, Pa.

Quantity of tons and value in dollars of annual product:

*1. 17,500 net tons; valued at $16,000 on cars at mines.

†2. 34,000 " valued at 30,000 "

Whole number of persons employed: *1. 30 men; †2. 65 men.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	*1—24 †2—56	....	‡$1 75 to ‡ 2 50	....	*1—9 mos. †2—8 "	
Miners on wages.....	*1—... †2—...	....	....	....	....	
Outside laborers.....	*1—1 †2—2	....	....	....	....	
Inside laborers......	*1—... †2—1	....	....	....	....	
Outside mule drivers,	*1—1 †2—1	....	....	....	....	
Inside mule drivers..	*1—2 †2—3	....	....	....	....	
Weigh master.......	*1—1 †2—1	....	....	....	....	
Dumpers............	*1—1 †2—1	....	....	....	....	
Slate pickers.........	*1—1 †2—1	....	....	....	....	
Mining overseers ...	*1—1 †2—1	....	....	....	....	
Civil engineers......	*1—1 †2—1	....	....	....	....	
Dispatchers..........	*1—1 †2—1	....	....	....	....	
Clerks...............	*1—1 †2—1	....	....	....	....	

Characteristics of Colliery.—Excelsior is a new colliery—just opened on March 1, 1875. Was interrupted by ten weeks' strike in May and June, and we really had less than eight months' work in 1875. It is difficult to get at the exact number of men—we average it at sixty-five—as no two months were near the same. As fast as we increased the capacity men were added. We are at present employing eighty-five to ninety-five men in this colliery.

FISHERS & MILLER, and
FISHER BROS. & MILLER.

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*1. Signifies Fisher Colliery. †2. Signifies Excelsior Colliery.
‡ Some earn $3 00 per day.

MOOREDALE.

Reakirt Bro. & Co., Philadelphia. Mine located in Huntingdon county.

Quantity of tons and value in dollars of annual product: 20,928 tons; value at mines, $23,020.

Whole number of persons employed: 50, men and boys.

In the classification made below, the number of each class employed, with the daily wages paid to each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid to boys..........	Time in operation during year....	REMARKS.
Miners on contract...	32	10	$60 pr.mo	$10 pr. mo	9 mos.	
Outside laborer......	1	......	1 60 pr d	....	"	
Inside laborer.......	1	......	1 75 "	....	"	
Outside mechanic...	1	......	1 75 "	....	"	
Outside mule driver,	1	......	1 75 "	....	"	
Inside mule drivers,	4	......	1 75 "	....	"	
Weigh master........	1	......	1 75 "	....	"	
Dumpers	......	......	....	....	"	Dumper and weigher.
Mining overseer......	1	......	2 00 "	....	"	
Superintendent......	1	......	3 50 "	....	"	

REAKIRT BRO. & CO.

ROBERTSDALE.

Rockhill Iron and Coal company, Robertsdale, Huntingdon county, Pa.

Whole number of persons employed: 319.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	231	......	$2 10	......	....	
Miners on wages.....	......	6	....	$ 75	1 year.	
Outside laborers.....	2	2	1 00	50	....	
Inside laborers......	......	3	....	50	....	
Outside mechanics...	6	......	1 75	......	....	
Outside mule drivers	12	2	1 25	75	....	
Inside mule drivers,						
Weigh master........	3	......	1 50	......	....	
Dumpers						
Slate pickers.........	5	......	1 00	......	....	
Coke yard...........	37	2	1 00	75	2 mos.	
Coal washers	5	1	1 25	75	....	
Teamsters...........	2	......	1 25	......	....	

(Signed) H. G. H. TARR, *Super't.*

PHILADELPHIA, *June 6th*, 1876.

SIR :—This company does not operate any coal mines ; all the mines on their road are worked by other parties. I therefore return you the blank.

Respectfully,

J. P. AERTSEN,
Treasurer H. & B. T. M. R. R.

To W. HAYES GRIER,
Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

INDIANA COUNTY.

SALTSBURG COAL CO.

Saltsburg Coal Co., Saltsburg, Indiana county, Pa.

Quantity in tons and value in dollars of annual product: 40,000 tons. $40,000.

Whole number of persons employed : 60.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys........	Time in operation during year....	REMARKS.
Miners on contract...	45	......	$2 25	......	Entire year.	
Outside laborers.....	2	......	1 50	......		
Outside boss.........	1	......	2 50	......	....	
Inside laborers......	3	......	1 75	......	....	
Outside mechanic ...	1	......	3 00	......	....	
Outside mule drivers Inside mule drivers,	4	......	1 75	......	....	
Weigh master.......	1	......	2 25	......	....	
Dumpers............	2	......	1 75	......	....	
Mining overseer.....	1	......	3 25	......	....	

I. W. RHEY, *Superintendent.*

LAWRENCE COUNTY.

WELSH BANK.

Wampum Coal Company, Wampum, Lawrence county, Pa.

Quanty in tons and value in dollars of annual product: 14,365 tons; $22,984 00.

Whole number of persons employed, 52.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	Remarks........
Miners on contract......	40	......	Average $1 40	......	About 10 mos.	....
Outside laborers........	2	......	1 50	......	....	....
Inside laborers..........	2	......	1 75	......	....	....
Outside mechanics......	1	......	2 00	......	....	....
Outside mule drivers...	1	......	1 50	......	....	....
Inside mule drivers....	3	......	1 75	......	....	....
Weigh master..........	1	......	2 00	......	....	....
Dumpers................	1	......	1 50	......	....	....
Mining overseers.......	1	......	3 00	......	....	....

(Signed) WAMPUM COAL CO.

LYCOMING COUNTY.

"M'INTYRE" MINE, LOCATED IN LYCOMING COUNTY.

The M'Intyre Coal company, Elmira, N. Y., and M'Intyre, Pa.

Quantity of tons and value in dollars of annual product: 164,504 net tons—value, $2 per ton, $329,008.

Whole number of persons employed: 443.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men............	Daily wages paid boys...........	Time in operetion during year...	REMARKS.
Miners on contract...	275	......	....	......	10 mos.	During the past 4 years, ending May 15, 1876, our mines have been operated by Messrs. Fulton & Robertson, under contract. Since above date we have resumed operations ourselves.
Miners on wages.....	8	......	$2 25	......	1 year.	
Outside laborers.....	12	2	1 00 to 1 80	90 c.	10 mos.	
Inside laborers......	20	32	1 80 to 2 25	90c. to $1 12	10 "	
Outside mechanics...	12	......	1 80 to 3 15	......	10 "	
Inside mechanics....	2	......	2 25	......	10 "	
Outside mule drivers	12	......	1 68	......	10 "	
Inside mule drivers,	26	......	1 80	......	10 "	
Weigh masters......	2	......	1 58 & 2 25	......	10 "	
Dumpers	10	.....	1 58	......	....	
Slate pickers.........	18	2	1 50 to 1 58	$1 to 1 12	....	
Mining overseers....	2	......	....	......	1 year.	
Civil engineer.......	1	......	....	......	1 "	
Stable men..........	2	......	1 58	......	10 mos.	
Wood choppers......	5	......	1 58	......	10 "	

C. J. LANGDON, *President.*
By WM. L. KINGMAN, *Treasurer.*

MERCER COUNTY.

BLACK DIAMOND.

Jos. Forker & Co., Sharon, Pa.

Quantity of tons and value in dollars of annual product: 10,742 tons. Value, $24,169 50.

Whole number of persons employed: 66.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	50	......	......	......	100 days.	The miners were on a strike from the 1st of February until September 4th, and trade was very dull the rest of the year.
Outside laborers.....	3	......	$1 50	......		
Inside laborers......	3	3	2 00	$0 75	......	
Outside mechanic ...	1	.....	2 25	......	......	
Inside mule drivers,	3	......	2 00	......	......	
Weigh master.......	1	......	2 50	......	......	
Mining overseer.....	1	......	4 00	......	......	
Manager............	1	......	4 00	......	......	

(Signed) JOSEPH FORKER & CO.
Per Hosack.

OAK HILL COLLIERY.

Isaac Davy and Richard Humphrey, Wheatland.

Product for 1875, 1,825 tons; value of same, $3,650.

Number of persons employed—ten men and two boys. Wages; miners on contract, $1 75 per day. Weighmaster, $1 75; one mule driver 90 cents.

Characteristics of Colliery.—A country bank, engaged in working out pillars in an old mine.

ISAAC DAVY.

SMITH BANK.

I. D. Risher, West Middlesex, Mercer county.

Annual product, 2,100 tons; value, $4,700.

Whole number of persons employed, 20. Wages: miners on contract, $2 00; outside laborers, $2 00; mule drivers, $1 50.

Characteristics of Colliery.—The mine has been operated for over twenty years, and at times the daily average has been 200 tons. The coal is of the best quality of block coal, and has been used in the manufacture of iron. Thickness of vein, from two to four feet.

I. D. RISHER.

GOUGH BANK.

Pardoe, Mercer county.

I am not working the bank this year. The price of coal is too low to justify me.

JAMES BRECKENRIDGE.

HICKORY MINE.

Spearman, Ulp & Co., Sharon, Mercer county, Pa.

Quantity of tons and value in dollars of annual product: 12,600 tons; $25,000.

Whole number of persons employed : 64.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	45	3	$1 75	$1 00	7 mos.	This mine is opened by a shaft one hundred and ten feet deep. Located in Hickory township, Mercer county, Pa., on the Sharpsville railroad, seven miles from the Erie and Pittsburgh railroad.
Miners on wages.....	4	....	1 75	......	....	
Outside laborer.....	1	....	1 40	......	1 mo.	
Inside laborers......	2	....	1 87½	......	....	
Outside mechanic...	1	....	2 12½	......	7 mos.	
Inside mechanic....	1	....	2 12½	......	7 mos.	
Inside mule drivers,	....	3	......	1 75	7 mos.	
Weigh master.......	1	....	......	......	7 mos.	
Dumper.............	1	....	......	......	7 mos.	
Mining overseer....	1	....	......	......	12 mos.	
Manager............	1	....	2 00	......	12 mos.	

The coal is a fine quality of block or splint, used for manufacturing iron in its raw state, but owing to the depression of the iron business for the last year or two, there has been but a limited demand for it since the mine has been opened. In February, 1875, there was a reduction in the price of mining which caused a strike, which lasted for seven months. After accepting the reduction, the demand for coal was so small that the mines could not dispose of more than one-third of their production.

(Signed) SPEARMAN, ULP & CO.

Per R. M. Ulp.

M'KEAN COUNTY.

CLERMONT.

The Buffalo Coal Company, Clermont, M'Kean county, Pa.

Quantity of tons and value in dollars of annual product: 33,000; $50,000.

Whole number of persons employed: 150 to 175.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	120	20	*			
Miners wages	2		$2 00			
Outside laborers	2		1 25			
Inside laborers	2		1 62½			
Outside mechanic	1		2 25			
Outside mule drivers		4		$ 50		
Inside mule drivers,	7		1 50			
Weigh master	1		2 00			
Dumpers	5		1 37½			
Slate pickers	3	4	1 37½	75 to 1 00		
Mining overseer	1					
Civil engineer	1					
Blacksmiths	3		2 00			

Number of men, &c., is as of December 31st, as during year. Number of men on contract and wages varied so greatly that a correct statement for for year cannot be made. Shipments began June 1st. Mines were in operation about six months. Number of tons mined is not precisely correct, but is sufficiently near for your purpose.

Characteristics of Colliery.—Colliery is a double drift, having two entrances separated by 100 feet natural strata; has natural drainage; is ventilated by air shaft with furnace at bottom; no gas. Coal—common bituminous. System of mining—breast and pillar. Colliery differs in no way from those in Tioga county, except as to small matters of detail.

G. MACFARLANE,
Engineer Buffalo Coal Co.

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* Paid by ton.

LONGWOOD COAL MINES.

J. E. Butts, Jr., agent, Alton, M'Kean county, Pa.

Quantity of tons and value in dollars of annual product: 22,603 tons—$59,959 80.

Whole number of persons employed: 89.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	7	1	$2 50	75c.	11 mos.	
Miners on wages.....	53	......	2 75	......	....	
Outside laborers.....	11	......	1 50	......	....	
Inside laborers......	3	......	1 50	......	....	
Outside mechanics...	4	......	1 87½	....	....	
Inside mechanics....	1	......	2 50	......	....	
Outside mule drivers,	3	......	1 37½	......	....	
Inside mule drivers,	6	......	1 37½	......	....	
Weigh master.......	1	......	1 75	......	....	
Dumper.............	1	......	1 50	......	....	
Slate pickers.........	2	......	1 50	......	....	
Mining overseers....	2	......	3 00	......	....	

J. E. BUTTS, Jr., *Agent.*

SOMERSET COUNTY.

KEYSTONE MINES.

Keystone Coal and Manufacturing Company, Keystone Junction, Somerset county, Pa.

Quantity of tons and value in dollars of annual product: 56,478 tons, 2,240 lbs; value @ $1 30, $73,421 40.

Whole number of persons employed: average about 91.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	75	......	$1 65	......	12 months.	
Outside laborers.....	2	......	1 50	......		
Outside mechanics...	3	......	2 50	......		
Inside mechanic.....	1	......	2 00	......		
Inside mule drivers,	4	......	1 50	......		
Weigh master.......	1	......	2 00	......		
Dumpers...........	3	......	1 50	......		
Mining overseer.....	1	......	3 50	......		
Superintendent	1	......	5 00	......		

Characteristics of Colliery.—The coal from these mines is excellent for steam purposes, and has more than ordinary strength and body for other heating purposes.

It makes a pure white ash, has no slate, some sulphur, but less than West Virginia or Ohio coal, and is very free from impurities.

It leaves greater *bulk* of ash than some other coal but no greater *weight*. Ash is very porous.

Coal very dense and hard, making more lump coal than others. Leaving very little "large slab clinker."

Analysis is as follows:

Water	1.79
Gases..	19.35
Coke..	71.07
Ash..	7.79
	100.00

(Signed) F. H. WILLIAMS,
Sec. and Treas., 10 *Merchants' Exchange, Phila*

TIOGA COUNTY.

BLOSSBURG COAL COMPANY.

Blossburg Coal company, Corning, N. Y.—Mine located at Arnot, Tioga county, Pa.

Quantity of tons and value in dollars of annual product: 205,032 tons, at $1 60—$328,051 20.

Whole number of persons employed: 713.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid men	Time in operation during year....	REMARKS.
Miners on contract...	387	82	$3 25	$1 25	Mines worked 145 days during yaar.	
Outside laborers.....	28	5	1 64	87½		
Inside laborers......	11	......	2 00	....		
Outside mechanics...	9	......	2 50	....		
Outside mule driver,	1	3	1 87½	1 25		
Inside mule drivers.	55	7	1 87½	1 25		
Weigh masters.......	2	......	2 50	....		
Dumpers.............	27	......	1 60	....		
Slate pickers.........	56	4	1 60	87½		
Mining overseers....	4	......	4 00	....		
Civil engineer.......	1	......	6 39	....		
Door tenders........	......	28	....	87½		
Office................	3	......	3 00	....		

F. N. DRAKE, *President*.

FALL BROOK.

Fall Brook Coal Company, Watkins, N. Y. Mine located in Tioga county, Pa.

Quantity of tons and value in dollars of annual product: Coal mined in 1875, 105,861 net tons, 2,000 lbs.

Whole number of persons employed: 235.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during each year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men............	Daily wages paid boys...........	Time in operation during year'...	REMARKS.
Miners on contract...	150	....	$3 00	....	6 mos.	
Miners on wages.....	5	....	2 75	....	1 mon.	
Outside laborers.....	4	....	1 60	....	7 mos.	
Inside laborers......	8	12	1 70	$0 65	12 "	
Outside mechanics...	4	....	2 12 to 2 50	....	12 "	
Inside mechanics.....	4	....	1 80	....	12 "	
Inside mule drivers,	18	....	1 50	....	7 "	
Weigh master......	1	....	70 00 per mo.	....	7 "	
Dumpers............	8	3	1 60	75	7 "	
Slate pickers.........	12	....	1 60	....	7 "	
Mining overseer.....	1	....	125 00 per mo.	....	12 "	
Civil engineer......	1	....	75 00 "	....	12 "	
Shaftmen...........	2	....	2 12	....	7 "	
Outside foremen.....	2	....	2 50	....	7 "	

A. HARDT, *Chief Eng. F. B. C. Co.*

ANTRIM.

Fall Brook Coal Company, Watkins, N. Y. Mine located in Tioga county, Pa.

Quantity of tons of annual product: 76,457 tons (2,000 lbs.)

Whole number of persons employed: 178.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	113	......	$3 00	....	6 mo.	
Miners on wages......	2	......	2 75	....	1 "	
Outside laborers......	7	2	1 40	75 cts.	8 "	
Inside laborers.	3	6	1 25	75 cts.	9 "	
Outside mechanics..	3	......	2 00	....	12 "	
Inside mechanics....	3	......	1 75	....	12 "	
Outside mule drivers	1	......	1 50	....	12 "	
Inside mule drivers,	12	......	1 50—$1 00	....	6 "	
Weigh masters......	2	......	45 00 per mo.	....	12 "	
Dumpers.	3	......	1 50	....	12 "	
Slate pickers	19	......	1 40	....	12 "	
Mining overseer.....	1	......	125 00 per mo.	....	....	
Outside foreman	1	......	80 00 "	....	....	

THOMAS FARRER, *Manager, per W. H., Jr.*

MORRIS RUN.

P. Lynch, Assignee and Receiver, Syracuse, N. Y.

Quantity of tons and value in dollars of annual product: 167,249 tons.

Whole number of persons employed: 409.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	233	......	$2 50	....	....	
Outside laborers.....	21	......	1 50	....	....	
Inside laborers......	9	......	2 00	....	....	
Outside mechanics...	5	......	2 00	....	....	
Inside mechanics....	3	......	1 90	....	....	
Outside mule drivers	4	......	1 75	....	....	
Inside mule drivers,	89	......	1 40	....	....	
Weigh masters	3	......	2 00	....	....	
Dumpers	24	......	1 36	....	....	
Slate pickers	10	......	1 26	....	....	
Mining overseers....	4	......	2 70	....	....	
Civil engineers......	......	......	......	....	....	This work done by sup't.
Blacksmiths.........	4	......	2 00	....	....	

The collieries are located at Morris Run, Tioga county, Pa.

Characteristics of Colliery.—Our coal is semi-bituminous; reached by drifts nearly level; are well ventilated and well drained. The top is good and in all respects the works are quite safe for the miners and laborers.

PATRICK LYNCH,
Assignee and Receiver.

LANARK COAL MINE, TIOGA COUNTY.

This mine is located in Morris township, between Wilson and Stony Forks creeks, a little south-west from Antrim, in what is known as the Blossburg coal basin. The vein is about four feet thick and of a superior quality. The coal is mined for household use. Nothing but the coarse or lump coal is demanded by the local trade. Stony Fork and Wellsboro' being the principal markets for same, the former place being five miles, and the latter eleven miles from the mine. Last year about two hundred tons were mined and drawn away. This year more than double that amount will be mined and sold. The tract upon which the mine is located, contains six thousand acres, and all more or less underlaid with coal and heavily timbered. It is the property of William Bache, Esq., of Wellsboro', in this (Tioga) county. As it is further developed, I will apprise your Bureau of the fact.

ROBT. BROWNLEE, *Operator.*

VENANGO COUNTY.

M'ELHINNEY COAL MINES.

E. J. Bowen, Franklin, Venango county.

Employ from 8 to 20 men.

Daily wages paid men, $1 75; daily wages paid manager, $3 00.

The mines are situated in French Creek township, three miles from the city of Franklin, and owned by Col. James Bleakley and E. Taft, of Franklin, and leased by E. J. Bower, of Franklin, at 40 cents royalty per ton, weighed on the miners' scales.

The mines are worked all the year; but the principal part of the coal is taken out in the fall and winter. There are five grades of coal made, viz: lump nut, mixed nut and slack. The miners are paid 50 cents per ton for mining. Two screens are used, one double screen for the nut and slack, and one single screen. There were 687 days' work at $1 75 per day done in repairing the mines through the summer, so as to have them in good condition for the fall and winter trade.

E. J. BOWEN.

WASHINGTON COUNTY.

WALNUT HILL MINES.

S. T. Arnot & T. B. Robbins, Midway, Washington county, Pa.

Quantity of tons and value in dollars of annual product: 31,239 tons; $39,000.

Whole number of persons employed: 143.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on wages.....	100	20	$1 75	75	8 mos.	
Outside laborers.....	8		1 50		"	
Inside laborer.......	1		2 00		"	
Outside mechanics...	2		2 00		"	
Inside mechanics....	2		1 50		"	
Inside mule drivers,	7		1 75		"	
Weigh master.......	1		2 50		"	
Dumper..............	1		1 50		"	
Mining overseer.....	1		3 00		"	

T. BRUCE ROBBINS,
Manager.

WOOD & HUSTON.

Wood & Huston, Pike Run, Washington county, Pa.

Quantity of tons and value in dollars of annual product: 20,000 tons, $20,000.

Whole number of persons employed: 46.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract ..	30		$3 to $4		6 mos.	Vein of coal 7½ feet thick.
Outside laborers.....	6		$2 50	$1 50	6 "	
Inside laborers......	2		2 50		6 "	
Outside mule driver,	1		2 00		6 "	
Inside mule drivers,	4		2 00		6 "	
Weigh master.......	1		2 50		6 "	
Mining overseer.....	1		3 00		12 "	
Trapper boy.........				50	6 "	

WOOD & HUSTON.

MIDWAY BLOCK COAL CO.

Jonah Taylor and R. M. Ulp, Midway, Washington county, Pa.

Quantity of tons and value in dollars of annual product: 33,000 tons. $33,000.

Whole number of persons employed: 80.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys........	Time in operation during year...	REMARKS.
Miners on contract ..	60				6 mos.	We have a capacity for mining 300 tons per day, but could not make it that amount during 1875.
Miners on wages.....	1		$2 00		"	
Outside laborers.....	8		1 50		"	
Outside mechanics...	2		2 00		"	
Inside mechanic....	1		1 50		"	
Outside mule drivers,		2	1 00		"	
Inside mule drivers.		4	1 50		"	
Weigh master.......	1		1 50		"	
Mining overseer....	1		3 00		"	

(Signed) JONAH TAYLOR, *Supt.*

LAUREL HILL MINES.

W. P. Rend & Co., M'Donald P. O.

Quantity in tons of annual product: 64, 391.

Whole number of persons employed: 158.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys......	Time in operation during year....	REMARKS.
Miners on contract...	126	3		75 c.		
Outside laborers.....	12		$1 50			
Inside laborer.......	1		1 75			
Inside mechanic.....	1		2 12			
Outside mule drivers	2		1 75			
Inside mule drivers,	7		1 75			
Weigh master.......	1		2 25			
Dumpers...........	2		1 50			
Mining overseer.....	1		3 50			
Manager.............	1		2,000 00	per an	num.	
Clerk...............	1		1,000 00	"	"	

HUGH KNOX, *Manager.*

CEDAR HILL.

L. W. Morgan & J. N. Dixon, California, Pa.

Quantity of tons and value in dollars of annual product: 25,287.5 tons, @ $1 12 per ton—$28,322.

Whole number of persons employed: Average per month, 56.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on wages.....	50	......	2 39	......	247 dys.	
Outside laborer......	1	......	2 00	......	....	
Outside mule driver,	1	......	1 75	......	....	
Inside mule drivers,	2	......	2 00	......	....	
Weigh master.......	1	......	2 50	......	....	
Mining overseer.....	1	......	2 25	......	....	

Characteristics of Colliery.—Cedar Hill coal works, situated on east side of Monongahela river, in Fayette county, opposite the borough of California, four (4) miles below Brownsville, Pa.

Erected in 1871 by Morgan & Lambert, destroyed during the high water of February, 1873, re-built by L. W. Morgan the following spring, who operated them until August 1, 1874, when John N. Dixon became a partner.

The coal is an eight foot vein, about twenty feet above the river, being mined by drifting; is excellent for any purpose that bituminous coal is used for.

MORGAN & DIXON.

SHIRE OAKS.

Hodgson & Mort, Coal Bluff P. O., Washington county, Pa.

Quantity of tons and value in dollars of annual product: 20,000 tons. $25,000.

Whole number of persons employed: 59.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	40		$2 00		175 days.	
Miners on wages	5		2 00		175 "	
Outside laborers	4		2 00		175 "	
Inside laborer	1		2 00		175 "	
Outside mechanic	1		2 00		200 "	
Inside mule drivers,	4		1 50		175 "	
Weigh master	1		2 00		175 "	
Dumpers	2		1 75		175 "	
Mining overseer	1		2 50		300 "	

Characteristics of Colliery.—Colliery is situated about three-fourths of a mile from the Monongahela river, which we reach by an incline, which rises 3½ feet to the 100 feet. We check our cars by an engine at the head of the incline. We have a 4½ foot vein of good bituminous coal. Our yearly capacity is from 40,000 tons to 50,000 tons.

HODGSON & MORT.

ROBBINS' BLOCK COAL CO.

T. B. Robbins, Midway, Washington county, Pa.

Quantity of tons and value in dollars of annual product: 29,767 tons; $32,743 70.

Whole number of persons employed: 225.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on wages	85		$1 75		7 mos.	Did not commence operations until last of February, 1875.
Outside laborers	10		1 50			
Inside laborers	2		2 00			
Outside mechanic	1		2 00			
Outside mule drivers	4	1	1 50	$ 75		
Inside mule drivers	6		1 75			
Weigh master	1		2 00			
Dumper	1		1 50			
Mining overseer	1					
Bailing water		2		75		

(Signed) T. BRUCE ROBBINS,
Manager.

REED'S COAL WORKS.

J. W. Reed & Co., Greenfield, Washington county, Pa.

Annual product: 22,583 tons.

Whole number of persons employed: 65.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	4		$2 00		6 mos.	
Miners on wages	50		1 80		6 "	
Inside laborer	1		2 00		3 "	
Outside mule driver,	1				6 "	
Inside mule drivers,	2	1	2 00	$1 00	6 "	
Weigh master	1		2 25		6 "	
Checker	1		2 00		6 "	
Pumper	1		2 50		9 "	
Mining overseer	1		2 50		11 "	
Door boys		2		50 c.	6 "	

J. W. REED CO.

ALLISON'S MINES.

Jonathan Allison, Washington, Washington county, Pa.

Quantity in tons and value in dollars of annual product: 10,000 tons; of the value about $10,000.

Whole number of persons employed: 30.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on wages	23				8 mos.	
Outside laborer	1		$1 25			
Outside mechanic	1		1 50			
Outside mule driver,	1		1 50			
Inside mule driver	1		1 75			
Weigh master	1		1 25			
Dumper	1		1 25			
Mining overseer	1		2 00			

I have paid my miners during the last year, $2 per hundred bushels for digging coal. The mining overseer or pit boss, as we call him, does all the inside work with a little assistance from the other day hands. I think about eight months is what time we operated the last year.

Characteristics of Colliery.—Allison's mines are on the line of the Chartiers Valley railroad, about half way between Cannonsburg and Washington, in Washington county. The vein is about five and a half feet of the finest block coal, large in the veins, and has been pronounced both in Pittsburgh and Chicago markets, as a No. 1 coal for gas and steam purposes. During the past year from six to eight thousand tons were shipped to Chicago, which gave the best of satisfaction, and in a few years the character of our coal will command a good price, owing to its superior quality. The main entry runs in a north-western direction on the rise of the coal, the air is good and also drainage.

JONATHAN ALLISON.

Crow & Sons, Pike Run, Washington county, Pa.

Quantity of tons and value in dollars of annual product: 14,831 tons, amounting to $17,632.

Whole number of persons employed: 49.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid paid	Daily wages paid boys.........	Time in operation during year....	REMARKS.
Miners on contract..	40	......	$2 50	......	6 mos.	
Outside laborers.....	3	......	2 00	......	"	
Inside laborer........	1	......	2 25	......	"	
Outside mule driver,	1	......	2 00	......	"	
Inside mule drivers,	2	......	2 00	......	"	
Weigh master.......	1	......	2 25	......	"	
Mining overseer.....	1	......	2 50	......	"	

CROW & SONS.

CLIFF MINES.

Miller & Greenhalgt, Coal Bluff, Washington county, Pa.

Quantity of tons and value in dollars of annual product: 615,462 bushels. Valued at $36,927 72.

Whole number of persons employed: 106 men and boys.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract		8		$1 00	7 mos.	
Miners on wages	81		$2 25			
Outside laborers	3		2 25			
Inside laborers	2		2 25			
Outside mechanic	1		2 75			
Outside mule driver,	1		2 25			
Inside mule drivers,	7		2 25			
Weigh master	1		3 00			
Dumper	1		2 75			
Mining overseer	1		3 00			

MILLER & GREENHALGT.

YORTY'S PIKE RUN COAL WORKS.

H. C. Yorty, East Bethlehem, Westmoreland county.

Quantity of tons and value in dollars of annual product: 1,200 tons; value, $1,200 00.

Whole number of persons employed: 9.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	3		$2 00			
Outside laborer	1		1 50			
Inside laborer	1		1 50			
Outside mechanic	1		1 50			
Inside mechanic	1		1 50			
Dumper	1		1 50			
Mining overseer	1		1 50			

Characteristics of Colliery.—This vein of coal is about seven feet in thickness and is known as the "Monongahela river vein." The bottom half of this vein (that is from what is called the "bands" down) is very soft and contains a very large percentage of carbon and gas. Some gentlemen from Pittsburg who are largely interested in gas and coke and of course qualified to speak, say, "it is excellent for both purposes." The Pike Run banks are what might be truly called "country banks." We have no railroads or steamboats and of course our customers are the farmers and others, who depend on hauling their coal with teams. Some come from 9 to 12 miles distant. Then we have the man with his six-horse team, who takes 80 bushels down to the man with one horse, who takes but 15 bushels. I will also add that the consumption of coal in the rural districts is increasing every year. So your department will see that although Pike Run coal works are country banks to accommodate country people, yet they are an object not to be overlooked when making up the mining and industrial statistics of this great Keystone State.

HENRY C. YORTY.

MINGO COLLIERY.

Thomas S. Hutchinson, Monongahela City.

Mined 18,615 tons; valued at $21,708. Mined 3,723 tons nut; valued at $2,521.

Whole number of persons employed, 50; 42 miners on contract; wages $2 62½ per day; 1 boy 50 cts per day; 7 men wages not given.

Characteristics of Colliery.—This is a rich bituminous coal, about 5½ 6 feet, of 725 acres in one body. The pit mouth is about 72 feet to above the river, and runs in about 1,000 yards. The Pittsburgh, Virginia and C. railway runs about 100 feet from the mouth. The bridge over the P., V. & C. R. W. is the right height to load coal and can run coal either by rail or river.

The Bureau is in receipt of quite a large number of reports from small operators in Washington county, among whom are Samuel W. Rogers, Bealsville; George Siddell, East Bethlehem; John Banfield, Cannonsburg; James A. Thompson, Houstonville; Messrs. S. G. Walker & Bro., East Bethlehem; Joseph A. Cook, Cannonsburg; A. Burkhart, Pike Run; Wm. M'Bride, Patterson's Mills; Robert Wintersgill, Fredericktown; Stafft & Cocaine, Monongahela City, (new colliery); Boon Bros., Hustonville; Thomas Thompson, Cannonsburg; Adam Sharer, East Bethlehem; W. H. Evans, Cannonsburg; A. G. M'Pherson, Cannonsburg; Joseph Garrow, California; Phillip Plummer, Patterson's Mills; Thomas P. Fergus, Arden P. O., and Daniel M'Carty, which it was deemed best not to publish in detail.

WARNE.

H. A. Warne & Co., Monongahela City, Washington county, Pa.

Quantity of tons and value in dollars of annual product: 400,000 bushels.

Whole number of persons employed: 42.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	35		3 cts. pr bu.		8 mos.	This is an average report as there is no two miners' wages amount to the same. No two days' run amount to the same. About one-half of the miners lose nearly one-half time by only working part of days, and not going in at all for about a week or more after pay day.
Inside laborer........	1		$1 50			
Outside mule driver,		1		$1 00		
Inside mule drivers,	2		2 00			
Weigh master.......	1		2 50			
Pumper.............	1		2 25			
Mining overseer.....	1		2 50			

(Signed) H. A. WARNE & CO.

WESTMORELAND COUNTY.

NORTH WEBSTER.

John Gilmore, Webster, Pa.

Quantity of bushels of annual product : 291,276 bushels.

Whole number of persons employed : 56.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract ..	50		Per bus. 2½ to 3 cts.		102 dys.	Days up to Aug. 31, 1876.
Inside mule drivers,	3		$2 00			
Weigh master........	1		2 50			
Dumper.............	1		2 00			
Mining overseer.....	1		3 00			

Characteristics of Colliery.—I only started my new works January 1st, 1876. I did not run but very little coal at my old works in 1875. Have not done much at new works since starting, as I was using my coal barges for freighting coke.

I give you prices and amounts from January 1st, 1876, which is as near correct as I can get them, as prices in the wages for mining are changing nearly every month.

I could handle at my new works 10,000 to 12,000 bushels coal daily, with the addition of a few extra mule drivers and about 125 good miners, but have no use for that amount of coal at present.

JOHN GILMORE.

MILLWOOD COAL AND COKE CO.

Not incorporated.

Millwood Coal and Coke Co., Millwood station, Westmoreland county, Pa.

Quantity of tons and value in dollars of annual product: 80,708 tons, 2,000 lbs.; $90,000.

Whole number of persons employed: 100.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys	Daily wages paid men............	Daily wages paid boys............	Time in operation during year....	REMARKS.
Miners on contract ..	75	8	....	90 c.	Two-thirds, or ab't 8 mos.	
Outside laborers.....	3	......	$1 35	....		
Inside laborers......	3	......	1 60	....		
Outside mechanic. ..	1	......	1 60	....		
Inside mule drivers,	5	......	1 60	....		
Weigh master.......	1	......	1 80	....		
Mining overseer.....	1	......	....	....		

R. G. FORD, *Supt.*

WESTMORELAND MINES.

Westmoreland Coal company, superintendent's office, Irwin's Station, Westmoreland county, Pa. General office, Philadelphia.

Quantity of tons and value in dollars of annual product: 293,179 tons of 2,240 pounds=$410,450.

Whole number of persons employed: 730.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	546	......	$2 00	......	200 dys	
Outside laborers.....	50	......	1 45	......	....	
Inside laborers......	31	19	1 55	75c.	....	
Outside mechanics ..	5	......	1 90	......	....	
Outside mule drivers	6	......	1 45	......	....	
Inside mule drivers,	40	......	1 70	......	....	
Weigh masters......	5	......	2 04	......	....	
Mining overseer.....	......	......	2 75	......	....	
Car repairers........	30	......	1 75	......	....	

This report includes the following: Irwin drift, Southside drift, Brush Run drift, Larimer (No. 1) drift, Larimer (No. 2) drift, Spring Hill drift, Foster slope, Westmoreland shaft.

F. Z. SCHELLENBERG, *Super't.*

Penn Gas Coal Company, Irwin Station, Westmoreland county, Pa.

Annual product: 427,839 tons.

Whole number of persons employed: 1,014 men, and 32 boys.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men............	Daily wages paid men	Time in operation during year ...	REMARKS.
Miners on wages.....	766	......	$1 50	......	200 days.	
Outside labors.	83	......	1 25	......	"	
Inside laborers	67	......	1 40	......	"	
Outside mechanics ..	16	......	1 90	......	"	
Trappers..............	......	22	40	$ 70	"	
Mule drivers—boys..	10	......	......	1 00	"	
Inside mule drivers,	58	......	1 60	......	"	
Weigh master.......	6	......	1 50	......	"	
Dumpers	8	......	1 25	......	"	
Mining overseers....	6	......	2 50	......	"	
Civil engineers......	4	......	3 60	......	"	

Owing to the miners striking for three months, from March 1st to June 1st, 1875, the trade was seriously affected ; and when they returned to work, we had a large surplus of miners, who preferred to remain for what work we could give them, and as a consequence the average daily wages of the miners is very low. We had in the mines one-half more miners than was required by the trade, but they preferred to remain, even at the low average, to seeking work elsewhere.

W. WILSON,
Supt. Penn Gas Coal Co.

WEBSTER COAL WORKS.

W. C. Goeffey, Webster, Pa.

Quantity of tons and value in dollars of annual product: about 8,000 tons; valued at Tipple, $7,200.

Whole number of persons employed: 37.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys......	Daily wages paid men	Daily wages paid boys...........	Time in operation	REMARKS.
Miners on wages.....	30	......	$2 00	......	4 mos.	Miners paid by bushel, but average about $2 00 per day.
Outside laborer......	1	......	2 00	......	"	
Outside mule driver,	1	......	2 00	......	"	
Inside mule drivers,	2	......	2 50	......	"	
Weigh master.......	1	......	2 50	......	"	
Dumper.............	1	......	2 00	......	"	
Mining overseer.....	1	......	2 50	......	"	

W. C. GOEFFEY.

YOUGH NATIONAL COAL WORKS.

J. W. Reed & Co., and Yough National Coal Co.

Quantity of tons and value in dollars of annual product: about 250,000 bushels; $10,000.

Whole number of persons employed: 60.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year :

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	46	......	....	......	7 mos.	
Outside laborers.....	5	......	$1 75	......	....	
Inside laborers......	2	1	2 00	$0 50	....	
Outside mechanic...	1	......	2 00	......	....	
Inside mule drivers,	3	......	2 50	......	....	
Weigh master........	1	......	1 75	......	....	
Mining overseer.....	1	......	2 50	......	....	

WM. J. WOOD.

SHAFTON.

Mines located at Irwin station, Westmoreland county.

Shafton Coal Co., 305 Walnut street, Philadelphia.

Quantity of tons and value in dollars of annual product: 17,500 tons ; $20,000.

Whole number of persons employed: 60.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	45	6	$1 75	75 c.	170 days.	
Outside laborers.....	5	......	1 25	......		
Inside laborers......	2	1	1 40	75 c.		
Outside mechanics ..	3	......	1 75	......		
Inside mechanic.....	2	......	1 75	......		
Inside mule drivers,	3	......	1 75	......		
Weigh master......	.....	1	......	75 c.		
Mining overseer.....	1	......	3 00	......		
Day engineer........	1	......	2 33	......		
Night engineer......	1	......	1 60	.....		

J. R. SOWER,

President Shafton Coal and Coke Co.

ERWINA MINES, WESTMORELAND COUNTY, PA.

Isaacs & Overholt, Mt. Pleasant, Pa.

Quantity of tons and value in dollars of annual product: 22,500 tons; $38,812 value.

Whole number of persons employed: 23.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	8	......	$2 25	......	300 dys	
Coke drawers.........	7	......	2 00	......	300 "	
Outside mechanic ...	1	......	2 00	......	300 "	
Outside mule driver..	1	......	1 50	......	300 "	
Inside mule driver..	1	......	1 50	......	300 "	
Car forkers..........	3	......	1 50	......	300 "	
Mining overseer.....	1	......	2 50	......	300 "	
Civil engineer.......	1	......	3 50	......	10 "	

ISAACS & OVERHOLT.

WAVERLY MINES.

Westmoreland county, Pa.

Waverly Coal and Coke Company, Pittsburgh, Pa.

Quantity in tons and value in dollars of actual product: 75,000 tons, $75,000.

Whole number of persons employed: 113.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract ..	80	......	Av. $2 50	......	8 mos.	
Outside laborers.....	20	......	1 25	......	....	
Outside mechanics ..	2	......	2 00	......	....	
Outside mule drivers	3	......	1 50	......	....	
Inside mule drivers,	3	......	1 50	......	....	
Weigh master.......	1	......	1 75	......	....	
Dumpers	2	......	1 50	......	....	
Mining overseers....	2	......	3 40	......	....	

WAVERLY COAL AND COKE CO.

IRON CITY COAL WORKS, WEBSTER, PA.

Phillips & Mittenzway, Twentieth and Water streets, Pittsburgh.

Quantity of tons and value in dollars of annual product: 32,000 tons; $37,000 at mines.

Whole number of persons employed: 85.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid men	Time in operation during year	REMARKS.
Miners on contract	70					Works actually run coal 254 days from July 1, 1875, to July 1, 1876.
Steam engineeer	1		*$70 00			
Outside laborers	2		1 50			
Outside mechanic	1		2 50			
Inside mechanic	1		2 50			
Outside mule drivers,	6		2 00			
Weigh master	1		2 75			
Dumpers	2		2 25			
Mining overseer	1		*100 00			

* Per month.

PHILLIPS & MITTENZWAY.

FOUNTAIN MINES.

Ihsem, Lake & Co., Scottdale, Westmoreland county.

Quantity mined, about 21,000 tons; value of same, $17,000.

Whole number of persons employed, 15—12 miners on contract, who earn about $2 15; 3 other persons employed, wages not given.

Coal is soft bituminous and is used for coking—mined by "drifts," no pumping.

HOME COKE WORKS.

Sherrich, Rice & Co., Scottdale, Pa.

Quantity mined, 6,240 tons; value, $8,000.

Whole number of persons employed, 15.

Wages: 6 miners on wages at $1 50; 6 outside laborers at $1 50; 1 outside mule driver, at $1 75; 1 inside mule driver, $1 75; 1 boy at 85 cents. In operation 260 days.

UNION COAL WORKS.

Jacob Turner, Jr., Webster, Pa.

Annual product of mines, 16,000 bushels, valued at 4 cents per bushel.

Whole number of persons employed; From 25 to 65.

Characteristics of Colliery.—Pit in about six hundred yards; two pit mouths, two shafts and one for the engine. We have a sump twenty-five feet of a dip in a hundred and twenty-five yards, at which we have an engine to pull up the cars.

The vein is from four and a half to five feet high, clean, and of a very good gas quality.

GREENSBURG COAL WORKS.

Greensburg Coal Company.

Mined 42,094 tons, valued at $44,198.

Whole number of persons employed: 50.

37 miners on contract at 45 cents per ton, 13 employees wages not stated.

AMERICAN COKE WORKS.

Samuel Warden & Co., Mt. Pleasant.

Number tons of coke made, 6,626; value, $7,454 25. Raw coal, 140 tons, value $112—total value of production, $7,566 25.

Number of persons employed: 11. 5 miners on wages at $1 50 per day, 5 laborers at $1 25, 1 outside mule driver $1 40.

Remarks.—The character of the coke made is No. 1. The coal is the same as the Connellsville, but a little harder. We have been doing but a small business as yet. We commenced our work in the fall of 1873, just before the panic, and have done nothing since to increase our operations, but expect to when the times are more propitious.

UNION COKE WORKS.

Hurst, Stoner & Co., Mt. Pleasant, Pa.

Quantity of tons and value in dollars of annual product: 19,516 tons coke; 6,233 bushels coal; cost of manufacture, $21,140 66; net, $24,710 57; clear, $3,570 11.

Whole number of persons employed: 44.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year:

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on wages	20		23c per wagon		10 mos.	
Outside laborers	2		$1 25			
Inside laborer	1		1 50			
Outside mechanic	1		1 50			
Inside mule drivers,	3		4c per wagon			
Dumper	1		$1 50			
Mining overseer	1		1 50			
Coke drawers	13		51c per oven			
Yard boss	1		$1 50			
Superintendent	1		$100 per mo			

Characteristic of Colliery.—Have 70 coke ovens and 105 acres of coal. Run 105 wagons of coal per day, making 7 cars coke, 600 bushels per car.

BRADEN HURST, *Super't.*

VALLEY COKE WORKS.

Willson, Boyle & Playford, Scottdale.

28,212 tons of coal mined, producing 12,422 tons of coke, valued at $15,527 50.

Whole number of persons employed, 66; 26 miners on wages; 28 outside laborers, wages from $1 25 to $1 75 per day; 7 boys at 75 cts to $1 00; 3 inside mule drivers, 1 weigh master, wages not stated; 1 mining overseer, wages $3 00 per day. In operation 10 months.

BITUMINOUS COAL—WAGES.

NAME OF COLLIERY.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers—men	Inside laborers—boys	Outside mechanics—men	Outside mechanics—boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule driver—men	Inside mule drivers—boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers	Remarks
Allegheny county—																	
Globe mines	$2 00 p. d.		$1 50				$2 00		$1 85		$1 85					$2 50	$1 75
Youghiogheny coal works	3 c. p. bu.						2 00				2 00		$2 00			3 00	2 00
William Stone's coal works,	3 c. "		2 00	$1 00	$2 50		2 75		2 50		2 50		2 50			3 12	
Milesville mines	not giv.	$2 37 p. d.	2 00						2 37		2 37					2 37	2 37
Oak Ridge mine	$2 00 p. d.		1 66		1 75						1 66					3 50	2 25
Rock Run coal works	3 00 p. d.		2 25		2 25		2 50				2 50		2 25			2 25	3 00
Isabella coal works	av. 50c p. car.		1 75		2 25	$1 00	2 50				1 75		2 00			4 00	
Belleview coal & salt works,	2¾ c. p. bu		1 35	$10 p mo.	1 60	50	2 00	$1 25	2 00	$1 75	2 00	$1 75	*4c.			3 00	*40
Enterprise coal works	$2 00 p. d.	2 00 p. d.	1 50														
Beck's Run	2 00 "		2 00		2 00		2 00		2 00		2 00		2 00			2 00	2 00
Robbins & Jenkins' c. mines,	not giv.		2 25						2 00		2 25					2 75	2 75
Horner & Roberts' c'l mines,	2 75 p. y.	3c. p. bu.	2 00		2 00						2 25		2 00			3 00	2 50
lton	3 00 p. d.		2 00		2 25		3 00		2 00		2 00						2 50
M'Ca mines	not giv.	2½c. p. bu	1 50				1 50				1 50		1 50			2 50	2 00
Streets Run coal work	$2 75 p. d.		2 25	75	1 75		3 00		2 00		2 00		2 25			3 50	3 00
Coal Ridge mines	2 11 "		2 25		2 25		2 25				2 00		1 80			3 00	2 50
Venture mines	53 "				2 25		2 12		2 00		2 00		2 12			3 00	2 25
Chess mines	2 15 "				1 85		2 12				2 00		1 60			3 00	2 25
J. S. Neels	not giv.		2 25		2 25		2 50				1 50		1 75				2 00
Penny's coal works	65 c. p. t.		2 12	1 00			2 50				2 25	1 50	2 25			3 00	3 25
Queen City coal works	$2 50 p. d.	$2 50 p. d.	2 25	1 00			2 25				2 25	1 50	2 25				2 25
Jefferson coal works	2¾c. p. bu		2 00						2 25		2 37½	1 37½	2 37½			3 00	2 50

Keeling & Co. coal mines....	70c. p. t.	70c. p. t.	2 00	75	2 00	75	2 25	1 25	......	......	2 12	......	2 00	......	....	......	2 50
Lovedale colliery............	not giv.	....	2 00	......	2 00	......	2 50	......	......	......	2 00	......	2 50	......	....	3 00	2 00
Hampton coal mines	"	....	1 50	......	2 00	......	2 25	......	......	......	2 00	......	1 25	......	....	......	2 50
Corey & Co..................	"	....	1 75	......	2 25	......	2 25	......	......	......	2 00	......	1 75	......	....	3 00	2 00
Swissdale, Oak Hill and Willow Grove................	....	$2\frac{3}{4}$c. p.bu	1 50	......	......	......	......	......	......	......	......	......	......	......	....	......	......
Kenney's coal works........	....	$1 75 p. d.	1 50	......	1 50	......	......	......	......	......	1 75	......	......	......	....	......	......
National mines.............	not giv.	....	1 50	85	1 50	......	2 25	......	1 75	......	1 50	1 25	1 60	......	....	2 75	2 00
Pittsburgh and Connellsville gas coal and coke company,	"	....	1 65	......	1 65	......	2 16	......	......	75	......	75	1 65	......	....	2 10	1 95
Average..............	....	....	1 86$\frac{1}{4}$	89$\frac{1}{8}$	1 99$\frac{1}{4}$	75	2 30	1 25	2 06$\frac{1}{2}$	1 25	2 02	1 35	1 97	......	....	2 88	2 33
Beaver county—																	
Auburn coal company.......	80 c. p. t.	....	$1 50 to 2 00	....	......	......	$2 00	......	$2 00	......	$1 50	.....	$1 50	......	....	$2 25	$1 75
†Beaver gas coal works........	....	....	....	......	......	......	......	......	......	......	......	......	......	......	....	......	......
J. F. Mansfield..............	$2 10 p. d.	$2 25 p .d.	1 40	......	$1 50	......	2 25	......	1 40	......	1 50	......	1 40	......	....	......	1 75
Beaver mines...............	70 c. p. t.	....	1 50	......	......	......	2 50	......	1 50	.....	1 50	......	1 50	......	....	3 00	1 50
Clinton coal mines	$2 25 p. d.	....	1 50	......	2 25	......	2 46	......	......	$ 75	1 50	......	1 50	......	....	3 50	1 87
Average	....	....	1 53	......	1 87$\frac{1}{2}$	......	2 30	......	1 63	75	1 50	......	1 47	......	....	2 92	1 71
Bradford county—																	
Barclay coal company.......	75 c. p. t.	....	$1 62	......	$1 50	......	$1 90	......	$1 65	$1 00	......	......	$1 50	$1 50	....	$2 85	$1 90
Carbon Run.................	$2 92 p. d.	....	1 50	......	1 55	$1 16	2 09	......	1 65	......	$1 72	$1 25	1 65	1 50	85c	4 50	2 25
Average	....	....	1 56	......	1 52$\frac{1}{2}$	1 16	2 99	......	1 65	1 00	1 72	1 25	1 57$\frac{1}{2}$	1 50	85c	3 67$\frac{1}{2}$	2 07$\frac{1}{2}$
Blair county—																	
Lilly colliery................	$1 75 p. d.	$1 75 p. d.	$1 60	......	......	......	......	......	......	......	$1 75	$1 75	......	......	....	$2 62	$1 75
Ben's creek.................	1 60 "	....	....	......	......	......	......	......	$1 50	......	1 50	......	......	......	....	2 62	......
Horse Shoe coal mine........	1 25 "	....	1 60	......	......	......	$1 60	......	1 50	$1 00	1 25	......	$1 50	......	....	3 20	1 50
Horse Shoe coal mine, No. 2.	1 25 "	....	1 00	......	$1 25	......	1 60	......	1 25	......	1 25	......	1 50	......	....	3 20	1 50
North Cumberland mines...	....	1 00 p. d.	....	......	......	......	......	......	......	......	......	......	......	......	....	......	......
Bennington shaft............	2 00 p. d.	....	....	......	......	......	......	......	......	......	......	......	......	......	....	......	......
Miller vein..................	1 50 "	....	....	......	......	......	......	......	......	......	......	......	......	......	....	......	......
Average	1 56 p. d.	1 37$\frac{1}{2}$p.d.	1 40	......	1 25	......	1 65	......	1 41	1 00	1 44	1 75	1 50	......	....	2 91	1 58
Cameron county—																	
Mount Hope colliery	50c. p. t.	....	$1 25	$ 50	$1 50	$1 60	$2 00	......	......	......	$1 25	......	$1 00	......	....	$2 50	$1 33

* Per 100 bushels.

† Not in operation.

BITUMINOUS COAL—WAGES—CONTINUED.

NAME OF COLLIERY.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers—men	Inside laborers—boys	Outside mechanics—men	Outside mechanics—boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers—men	Inside mule drivers—boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers	Remarks
Elk county—																	
St. Mary's		$2 00 p. d.	$1 50				$2 25		$1 50		$1 25		$1 50		60c	$3 25	$1 50
Connor	$1 00 p. d																
* King's mines																	
North-western mining co	65c. p. t.		1 25		$1 75		2 50		1 25		1 50		1 50			3 00	1 25
Average		2 00 p. d.	1 37½		1 75		2 37½		1 37½		1 37½		1 50		60c	3 12½	1 37½
Cambria county—																	
Cambria iron company	$1 50 to 1 75 p. d.		$1 00 to 1 10		$1 00 to 1 10		$1 50 to 1 75			65c. to 75c.		65c to 75c				$3 50	$2 00
Cambria coal and coke co			1 25				1 50		$1 25		$1 25						2 50
South Fork coal works	40c. p. t.		1 15		2 10				1 15		1 15			$1 15		2 00	
Long Scaffold	70c. "																
Green Hill coal mine		$1 25 p. d.															
Helsop's colliery	60c. "	1 25 "															
Sonman colliery		1 90 "					1 75		1 75		1 75		$1 75			2 66	1 75
Lilly Vale colliery	1 25 to 1 75	1 50 "	1 50		1 50				1 50							1 75	
Average		1 47½ p.d.	1 23¾		1 55		1 62½		1 88	70c	1 38⅔	70c	1 75	1 15		2 48	2 08⅓

Centre county—																	
Snow shoe: mines 3-7		$2 50 p. d.	$1 37		$1 75	$1 62	$2 00			$1 62	$1 62		$1 37			$2 75	$2 25
Cuba coal mines	not giv.								not g.		not g.						
Derby coal mines	60c. p. t.				2 00		2 50		5c p.t,		5c p.t.		1 50	$1 25		2 50	2 00
Average		2 50 p. d.	1 37		1 87½	1 62	2 25			1 62			1 43½	1 25		2 62½	2 12½
Clarion county—																	
Mineral Ridge		$2 00 p. d.	$1 25		$1 25		$2 25		$1 50		$1 50		$1 25	$1 25		$2 75	$2 00
Fairmount coal company	$1 50 p. d.	1 00 "	1 75	$1 00	1 75		2 25		1 50		1 75		1 50				2 25
Monterey	1 75 "	1 75 "	1 50		1 50		2 00				1 75		1 50	1 50		2 50	1 75
Bostonia	2 50 "		1 50				2 10		1 50		1 50						1 58
Pitts'gh coal and mining co.,	75c. p. t.		1 75						1 75				1 70	1 70		3 50	1 90
Average		1 58⅓p.d.	1 45	1 00	1 50		2 15		1 56¼		1 62½		1 49	1 48⅓		2 91⅔	1 89⅔
Clearfield county—																	
Reading colliery	40c. p. t.		$1 40						$1 40		$1 40					$2 40	
* Karthaus coal company																	
Tunnel Hill colliery	not giv.		2 00			.50	$2 00				1 50					not g.	$2 00
Beaver colliery	"		1 75				2 00				1 50					2 75	1 00
Franklin colliery	"		1 62		$1 87	.62	2 37		1 62		1 62					2 75	2 25
† Philadelphia colliery	"																
Moshannon		$2 00 p. d.							1 75							4 00	2 00
Average		2 00 p. d.	1 66		1 87	.56	2 12⅓		1 59		1 50½					2 97¼	1 81¼
Greene county—																	
Ellis Stevenson	$1 25 p. d.																
Gregg's coal works	2c. p. bu.																
Mapletown coal mines	2c. "																$1 00
Sine colliery		‡ $1 p. d.															
Clement Curtis	not giv.																
Average																	1 00
Huntingdon county—																	
Cumberland coal mines	50c. p. t.										$1 30						$1 35
Blair, Howe & Barnet																	
Robertsdale coal mines	$2 10 p. d.	75c. p. d.	$1 00	50		.50	$1 75		$1 25	75c	1 25	75c	$1 50				1 50
Mooredale coal mines	60c. p. t.		1 60		$1 75		1 75		1 75		1 75		1 75			$2 00	1 75
Fisher's colliery	175 to 2 50	$2 00 p. d.	1 75		1 75		3 00										
Average			1 45	50	1 75	.50	2 16⅔		1 50	75c	1 43	75c	1 62½			2 00	1 53

* Not in operation. † Worked but two months. ‡ Including board.

BITUMINOUS COAL—WAGES—Continued.

NAME OF COLLIERY.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers—men	Inside laborers—boys	Outside mechanics—men	Outside mechanics—boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers—men	Inside mule drivers—boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers	Remarks
Fayette county—																	
Excelsior coal works		62½c p. t.									$2 00					$2 00	$2 00
Frost coal works		$1 75 p. d.															
Hopkins Moffitt																	
Rostraver coal works		$2 00 p. d.	$2 00								2 00		$2 00			2 00	2 00
Lawrison & Stauft	$1 50 p. d.		1 40	75c							1 60						
Rutherford mines	2½c p.bu.		2 00						$2 50		2 50					2 50	2 50
Spring Grove		$1 50 p. d.	1 50		$2 00		$2 00		1 50		1 75					2 00	
Carondelet	62½c p. t.		2 10		2 50		2 00		2 00		2 00		2 00			2 50	2 00
Clipper	2¼c p.bu.		1 40		1 50						1 75	$1 40	2 00			2 25	2 25
Sterling mines		$1 75 p. d.	1 50				2 00		1 25		1 50		1 50			2 50	
Mt. Braddock coke w'ks		1 75 "	1 50		2 00		2 00		1 75		1 50		1 50			2 25	
Washington coal mines,			1 50						1 80		1 80					1 80	
Tremont	2½c p.bu,		1 33		1 50						1 60	1 32	2 00			2 50	2 00
Summit mines		$1 50 p. d.	1 75				2 25		1 25		1 75					2 25	
Tyrone mines	$1 87 p. d.		1 50		2 25		2 00		1 55	$1 55						3 00	2 00
Jos. Trumbull coal wk's			2 00		2 00				2 00	2 00			2 00			2 00	2 00
Uniondale coke works	av'ge 44c p. wagon.		1 75	35c	1 25		1 75				1 75					2 50	1 75
Frick & Henry clay mi's		$1 50 p. d.	1 25		1 50		1 75		1 40		1 40					2 00	1 65
Jno. Cunningham & Co.		2 00 "														2 00	2 00
Average			1 63¼	55c	1 61		1 93		1 70	1 72½							

Lawrence county—																	
Welsh bank	$1 40 p. d.		$1 50		$1 75		$2 00		$1 50		$1 75		$1 50			$3 00	$2 00
Lycoming county—																	
M'Intyre coal mines	not giv.	$2 25 p. d.	$1 to 1 80	90c	$1 80 to 2 25	90c to $1 12	$1 80 to 3 15		$1 68		$1 80		$1 58	$1 54	$1 06	not giv.	$2 00
M' Kean county—																	
Clermont	not giv.	$2 00 p. d.	$1 25		$1 62		$2 25			50c	$1 50		$1 37½	$1 37½	75to$1	not giv.	$2 00
Longwood coal mines	$2 50 p. d.	2 75 "	1 50		1 50		1 87		$1 37½		1 37½		1 50	1 50		$3 00	1 75
Average		2 37½p.d.	1 37¼		1 56		2 06		1 37½	50c	1 43		1 43	1 43		3 00	1 87½
Mercer county—																	
Oak Hill	$1 75 p. d.										90c						$1 75
Black diamond	not giv.		$1 50		$2 00	75c	$2 25		$2 00							$4 00	2 50
Hickory mines	$1 75 p. d.	$1 75 p. d.	1 40		1 87½		2 42				1 75					3 00	1 75
Mount Morris		75c "	1 00		1 40						1 25					2 50	1 00
Smith bank	$2 00 p. d.		2 00								1 50						
Average		1 25 p. d.	1 47½		1 75⅔	75c	2 33½		2 00		1 35					3 16⅔	1 75
Somerset county—																	
Keystone mines	$1 65 p. d.		$1 50				$2 50				$1 50		$1 50			$3 50	$2 00
Tioga county—																	
Blossburg coal comp'y,	$3 25 p. d.		$1 64	87½c	$2 00		$2 50		$1 87½	$1 25	$1 87½	$1 25	$1 60	$1 60	87½c	$4 00	$2 50
Fall Brook coal comp'y, Fall Brook	3 00 "	$2 75 p. d.	1 60		1 70	65c	2 12 to 2 50				1 50		1 60	1 60		125 p.m	70p.m
Fall Brook coal comp'y, Antrim	3 00 "	2 75 "	1 40	75c	1 25	75c	$2 00		1 50		1 50		1 50	1 40		125 p.m	45 "
Morris Run coal comp'y	2 50 "		1 50		2 00		2 00		1 75		1 40	1 40	1 36	1 26		2 70	2 00
Average	2 93 p. d.	2 75 p. d.	1 53½	81c	1 73¾	70c			1 37½	1 25	1 56¾	1 32½	1 51½	1 46½	87½c		
Venango county—																	
M'Elhinney coal mine,	$1 75 p. d.																
Washington county—																	
Evans coal mines	$1 50 p. d.										$1 50						
Laurel Hill mines	not giv.		$1 50		$1 75		$2 12		$1 75		1 75		$1 50			$3 50	$2 25
Mingo coal mines	2 62 p. d.																
Cannonsburg coal bank,	2 00 "	$2 00 p. d.	1 00									$1 00					

BITUMINOUS COAL—WAGES—CONTINUED.

NAME OF COLLIERY.	Miners on contract.	Miners on wages.	Outside laborers—men.	Outside laborers—boys.	Inside laborers—men.	Inside laborers—boys.	Outside mechanics—men.	Outside mechanics—boys.	Outside mule drivers—men.	Outside mule drivers—boys.	Inside mule drivers—men.	Inside mule drivers—boys.	Dumpers.	Slate pickers—men.	Slate pickers—boys.	Mining overseers.	Remarks.
Washington—Con'd.																	
Walnut Hill mines	....	$1 75 p. d.	$1 50 p. d.	....	$2 00	....	$2 00	....	....	....	$1 75	....	$1 50	....	....	$3 00	$2 50
Robbins' Block coal co.,	....	1 75 "	1 50 "	....	2 00	....	2 00	....	$1 50	$ 75	1 75	....	1 50	....	....	3 00	2 00
Reed's coal works	$2 00 p. d.	1 80 "	....	....	2 00	....	....	....	2 00	1 00	2 00	$1 00	2 00	....	....	2 50	2 25
Allison's mines	2c. p. bus.	....	1 25 p. d.	....	....	....	1 50	....	1 50	....	1 75	....	1 25	....	....	2 00	1 25
Midway Block coal co.,	not giv.	2 00 p. d.	1 50 "	....	1 50	....	2 00	....	....	1 00	....	1 50	....	....	....	3 00	1 50
Wood & Huston	3 to $4 p.d.	....	2 50 "	....	2 50	....	....	....	2 00	....	2 00	....	....	....	....	3 00	2 50
Yorty's Pike Run coal works	$2 00 p. d.	....	1 50 "	....	1 50	....	1 50	....	....	....	....	....	1 50	....	....	1 50	....
Cedar Hill	....	2 39 p. d.	2 00 "	....	....	....	....	....	1 75	....	2 00	....	....	....	....	2 25	2 50
Shire Oaks	2 00 p. d.	2 00 "	2 00 "	....	2 00	....	2 00	....	1 50	....	2 00	....	1 75	....	....	2 50	2 00
Cliff mines	....	....	2 25 "	....	2 25	....	2 75	....	2 25	....	2 50	....	2 75	....	....	3 00	3 00
Stoffit & Cocaine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Crow & Sons	2 50 p. d.	....	2 00 p. d.	....	2 25	....	....	....	2 00	....	2 00	....	....	....	....	2 50	2 25
Average	....	1 69 p. d.	1 70 p. d.	....	1 97½	....	1 98	....	1 80	91	1 90	1 16	1 71	....	....	2 65	2 18
Westmoreland co.—																	
Greensburg coal works,	45c. p. t.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Penn gas coal company,	....	$1 50 p. d.	$1 25 p. d.	....	$1 40	....	$1 90	....	....	$1 00	$1 60	....	$1 25	....	....	$2 50	$1 50
Westmoreland mines	$2 00 p. d.	....	1 45 "	....	1 55	$ 75	1 90	....	$1 45	....	1 70	....	....	....	....	2 75	2 04
Valley coke works	....	not giv.	$1 25, 1 75	75c. to $1	....	....	....	....	....	....	....	....	....	....	....	3 00	....
works	....	2 00 p. d.	2 00 p. d.	....	....	....	....	....	2 00	....	2 50	....	2 00	....	....	2 50	2 50

North Webster	2¾c. p. bu.										$2 00		2 00			3 00	2 50
Yough National coal works			1 75 p. d.		2 00	50	2 00				2 50					2 50	1 75
Shafton coal company,	$1 75 p. d.		1 25 “		1 40	75	1 75				1 75					3 00	75
Union coke works	23c. p. w’g		1 25 “		1 50		1 50				4cp.w		1 50			1 50	
Millwood coal comp’y,			1 35 “		1 60		1 60				$1 60						1 80
Emma mines	$2 25 p. d.		2 00 “				2 00		1 50		1 50					2 50	
Waverly mines	2 50 “		1 25 “				2 00		1 50		1 50		1 50			3 40	1 75
American coke works,		1 50 p. d.	1 25 “						1 40								
Iron City coal works	not giv.	$70 p. mo.	1 50 “				2 50		2 00				2 25			4 00	2 75
Home coke works		1 50 p. d.	1 50 “	$ 85					1 75		1 75						
Fountain mines	$2 15 p. d.								not g.				not g.			not giv.	
Union coal works	3c. p. bus.	2 00 p. d.	1 75 p. d.														
Average			1 50 p. d.		1 57	66	1 90		1 65	1 00	1 84		1 75			2 78	1 92

BITUMINOUS—EMPLOYEES, PRODUCTION AND VALUE.

NAME OF COLLIERY.	Number of men employed......	Number of boys employed......	Total No. of men and boys......	Days in operation,	Production—tons..	Value...........
Allegheny county—						
Globe Mines................	47	......	47	290	45,600	$32,000 00
Youghiogheny Coal Works,	125	......	125	Indefin'e	‡1,206,269	52,282 10
William Stone's Coal W'ks..	128	13	141	175	72,364	88,659 43
Milesville Mines...........	33	7	40	200	‡473,683	18,000 00
Oak Ridge Mines...........	61	......	61	50	600	8,076 48
Rock Run Coal Works......	107	15	122	123	32,000	43,000 00
Isabella	66	9	75	300	60,097	39,183 00
Belleview Coal & Salt W'ks.	74	30	104	300	55,000	65,000 00
Enterprise Coal Works......	213	3	216	175	50,000	52,000 00
Beck's Run.................	395	5	400	200	100,000	125,000 00
Robbins & Jenkins'.........	153	20	173	200	‡964,666	27,330 00
Horner & Roberts	233	......	233	175	‡1,296,000	75,000 00
Fulton..........	83	2	85	175	32,000	44,200 00
M'Cabe Mines..............	47	......	47	200	....	....
Streets Run Coal Works....	123	2	125	250	33,333	51,333 00
Coal Ridge Mine.	90	8	98	230	....	....
Venture Mines..............	81	6	87	220	....	....
Chess Mines................	100	1	101	250	93,745	156,424 26
J. S. Neel's Coal Works....	71	......	71	226	32,800	36,900 00
Penny's Coal Works........	80	2	82	125	26,539	....
Queen City Coal Works	52	4	56	125	17,250	19,340 93
Jefferson Coal Works.......	117	4	121	135	‡968,000	47,418 40
Keeling & Co.'s Coal Mines,	375	14	379	150	132,000	....
Lovedale Colliery..........	113	......	113	175	327,000	327,000 00
Hampton Coal Mines.......	84	7	91	215	23,701	34,715 25
Corey & Co................	97	20	117	300	57,600	67,000 00
Swissdale, Oakhill and Willow Grove...............	197	......	197	150	68,400	82,080 00
Kenney's Coal Works......	56	10	66	150	‡531,226	26,561 30
National Mines...........	127	5	132	....	33,906	40,000 00
Pittsburgh & Connellsville Gas Coal and Coke Co....	209	10	219	300	96,000	192,000 00
Total reported.........	3,637	197	3,834	†197.05	2,167,942	1,651,501 00
Beaver County—						
Auburn Coal Co............	42	5	47	....	6,500	$10,400 00
Beaver Mines..............	92	.....	92	230	31,830	50,928 00
Beaver Gas Coal Works.* ..	......	......	......	....	....	....
Clinton Coal Mines.........	113	17	130	216	26,955	45,335 07
Cannel Coal Mines..........	58	......	58	....	15,000	24,000 00
Total.................	305	22	327	446	80,285	130,663 07
Bradford County—						
Barclay Coal Company.....	398	17	415	280	178,312	$187,227 60
Carbon Run	180	21	201	229	Refer to Schraeder C. C.	
Total.................	578	38	616	†254½	178,312	187,227 60
Blair County—						
Lilly Colliery	20	4	24	300	6,720	$6,991 00
Bens Creek................	15	......	15	300	9,914	9,307 00
Horse Shoe Coal Mines.....	15	1	16	50	1,350	1,350 00
Do....No. 2...........	18	......	18	50	1,344	1,344 00
North Cumberland Mines..	25	......	25	8 mos.	5,000	4,000 00

* Not in operation. † Average days in operation. ‡ Bushels.

BITUMINOUS—EMPLOYEES, PRODUCTION AND VALUE—*Continued.*

NAME OF COLLIERY.	Number of men employed.......	Number of boys employed........	Total number of men and boys....	Days in operation,	Production—tons,	Value ....
Blair County—Con.—						
Bennington Shaft...........	100	.....	100	....	47,632	$38,106 00
Miller Vein.................	66	10	76	12 mos.	21,000	31,000 00
Total reported........	259	15	274	†202	102,960	92,098 00
Cameron County—						
Mount Hope Colliery.......	44	5	49	91 days.	10,000	$13,000 00
Total..................	44	5	49	91	10,000	13,000 00
Cambria County—						
Cambria Iron Company....	334	65	399	300	211,000	$211,000 00
Cambria Coal and Coke Co.,	25	......	25	113	3,526	2,881 29
South Fork Coal Works....	32	......	32	110	7,000	7,000 00
Long Scaffold..............	1	1	2	300	1,200	1,200 00
Green Hill Coal Mine........	1	......	1	200	400	400 00
Helsop's Colliery...........	2	......	2	300	550	350 00
Sonman Colliery...........	63	5	68	251	43,305	45,562 95
Lilly Vale Colliery.........	15	2	17	140	30,000	30,000 00
Total reported........	473	73	546	†214¼	296,981	297,993 00
Centre County—						
Snow Shoe Mines 3-7.......	114	4	118	....	81,908	$81,908 00
Cuba Coal Mines...........	10	......	10	¾ time.	9,000	8,100 00
Derby Coal Mines..........	73	10	83	3 mos.	9,425	9,425 00
Total reported........	197	14	211	....	100,333	99,433 00
Clarion County—						
Mineral Ridge..............	185	......	185	300	60,000	75 to 90,000 00
Fairmount Coal Company..	82	11	93	300	54,186	79,741 88
Monterey..................	93	3	96	270	31,300	37,560 00
Bostonia..................	75	......	75	200	19,206¾	28,809 00
Pitts. Coal and Mining Co.,	170	......	170	312	97,703	48,850 00
Total reported........	605	14	619	276	262,395	284,960 88
Clearfield County—						
Reading Colliery...........	45	......	45	300	30,000	$25,000 00
Karthaus Coal Company...	....	......	......	....	....	....
Tunnel Hill Colliery.......	44	10	54	270	10,032 6-20	....
Beaver Colliery............	15	5	20	Indefin'e	5,424 4-20	....
Franklin Colliery..........	176	30	206	Full time	91,691 9-20	....
Philadelphia Colliery......	14	......	14	2 mos.	532 4-20	....
Moshannon Colliery........	58	4	62	270	50,000	42,000 00
Total reported........	352	49	401	†258	187,679 17-20	‡67,000 00
Elk County—						
St. Marys..................	122	1	123	....	94,468	$141,711 75
Connor....................	1	......	1	....	36	....
Kings Mines*...............	....	......	......	....	....	....
North Western Mining Co.,	53	......	53	5 mos.	7,671	11,506 06
Total reported........	176	1	177	....	102,175	153,217 81

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* Not in operation.

† Average days in operation.

‡ Reported.

BITUMINOUS—EMPLOYEES, PRODUCTION AND VALUE—*Continued.*

NAME OF COLLIERY.	Number of men employed......	Number of boys employed......	Total No. of men and boys........	Days in operation..	Production—tons..	Value...........
Fayette County—						
Excelsior Coal Works......	34	......	34	2 mos.	4,232	$2,218 17
Frost Coal Works	41	......	41	10 "	10,715	10,715 00
Hopkins Moffit	1	......	1	....	†400	....
Rostraver Coal Works......	70	......	70	6 mos.	16,000	28,000 00
Lawrison and Stauft...	11	2	13	60 days.	1,461	1,826 00
Rutherford Mines	41	4	45	10 mos.	26,000	26,000 00
Spring Grove...............	52	......	52	12 "	36,000	25,000 00
Carondelet..................	70	......	70	11 "	43,569	27,436 48
Clipper......................	50	6	56	8 "	21,947	38,407 53
Sterling Mines..............	250	......	250	12 "	100,000	125,000 00
Mt. Braddock Coke Works,	69	6	75	12 "	30,000	35,000 00
Washington Coal Mines....	19	......	19	10 "	11,184	7,576 48
Tremont.....................	64	4	68	8 "	20,362	35,633 43
Summit Mines..............	49	......	49	9 "	36,000	24,000 00
Tyrone Mines...............	44	......	44	12 "	39,637	49,546 00
Jos. Trumbull Coal Works,	40	......	40	9 "	16,000	16,000 00
Uniondale Coke Works....	31	1	32	....	23,000	28,000 00
Frick & Henry Clay Mines,	130	......	130	12 mos.	50,000	60,000 00
John Cunningham & Co....	60	......	60	7 "	20,960	10,481 00
Total reported........	1,126	23	1,149	*224	507,067	450,838 00
Greene County—	1	1	2	....	....	....
Ellis Stevenson.............	1	1	2	Indefin'e	600	$375 00
Gregg's Coal Works........	1	......	1	"	192	149 76
Mapletown Coal Mines.....	2	1	3	75 days.	800	800 00
Sine Colliery	2	......	2	16 "	100	100 00
Clement Curtis..............	2	......	2	....	160	160 00
Total reported........	9	3	12	....	1,852	1,584 76
Huntingdon County—						
Cumberland Coal Mines....	41	......	41	12 mos.	18,000	$18,000 00
Blair, Howe & Barnet......	60	20	80	....	20,568	24,000 00
Robertsdale Coal Mines....	303	16	319	300	....	....
Mooredale Coal Mines.... ..	42	10	52	9 mos.	20,928	23,000 00
Fisher's Colliery	30	......	30	9 "	17,500	16,000 00
Total reported........	476	46	522	*262½	76,996	81,020 00
Lawrence county—						
Welsh Bank.................	52	......	52	250	14,365	$22,984 00
Lycoming county—						
M'Intyre Coal Mines........	407	36	443	260	164,504	$329,000 08
Total reported........	407	36	443	260	164,504	329,000 08
M'Kean county—						
Clermont....................	148	28	176	Indefin'e	33,000	$50,000 00
Longwood Coal Mines......	88	1	89	275	22,603	59,959 80
Total reported........	236	29	265	275	55,603	109,959 80
Mercer county—						
Oak Hill.....................	13	......	13	216	1,825	$3,650 00
Black Diamond.............	63	3	66	100	10,742	24,169 50
Hickory Mines..............	58	6	64	175	12,600	25,000 00

* Average days in operation. † Bushels.

BITUMINOUS—EMPLOYEES, PRODUCTION AND VALUE.—*Continued.*

NAME OF COLLIERY.	Number of men employed......	Number of boys employed......	Total number of men and boys...	Days in operation,	Production—tons..	Value...........
Mercer County—Con.—						
Mount Morris...............	20	......	20	30 tons d.	$1 75 ton.	....
Smith Bank................	20	......	20	75	3,100	$4,700 00
Total reported........	174	9	183	141½	28,267	57,519 50
Somerset county............	91	......	91	300	56,478	$73,421 40
Tioga county—						
Blossburg Coal Co........ ..	584	129	713	145	205,032	$328,051 21
Fall Brook C. Co., Fall Br'k,	220	15	235	Ab. 8 mo.	105,861	....
Fall Brook Coal Co., Antrim,	170	8	178	Av. 9 mo.	76,457	....
Morris Run Coal Co........	409	......	409	....	167,249	....
Total reported........	1,380	152	1,535	....	554,599	....
Venango county—						
M'Elhinny Coal Mine......	15	......	15	Ab. 5 mo.	3,635	....
Washington county—						
Evans Coal Mines..........	6	1	7	Full time	2,200	$2,200 00
Laurel Hill Mines..........	155	3	158	Full time	64,391	....
Mingo Coal Mines..........	49	1	50	7 mos.	22,338	24,229 85
Cannonsburgh Coal Banks..	11	1	12	250 days.	6,000	6,000 00
Walnut Hill Mines.........	123	20	143	200 days.	31,239	39,000 00
Robbins' Block Coal Co....	223	2	225	7 mos.	29,767	32,743 70
Reed's Coal Works.........	62	3	65	6 "	22,583	....
Allison's Coal Mines........	30	......	30	8 "	10,000	10,000 00
Midway Block Coal Co......	74	6	80	6 "	3,300	3,300 00
Wood & Huston............	45	1	46	6 "	20,000	20,000 00
Yorty's Pike Run C'l W'ks,	3	1	4	8 "	1,200	1,200 00
Cedar Hill.................	56	......	56	247	25,287 5-20	28,320 00
Shire Oaks.................	59	......	59	175	20,000	25,000 00
Cliff Mines.................	90	16	106	7 mos.	615,462 bus.	36,927 72
Stoffitt & Cocaine..........	40	......	40	3 "	1,560	1,560 00
Crow & Sons...............	49	......	49	6 "	14,831	14,831 00
Total reported........	1,075	55	1,130	192 days.	274,696	245,312 00
Westmoreland County—						
Greensburg Coal Works....	50	......	50	256	42,094	$44,198 70
Penn Gas Coal Works......	1,014	32	1,046	200	427,839	....
Westmoreland Mines	711	19	730	200	293,179	410,450 00
Valley Coke Works........	59	7	66	250	28,212	15,527 50
Webster Coal Works.......	37	......	37	100	8,000	7,200 00
North Webster...........	56	......	56	102	291,276 bus.	....
Yough National Coal Works	59	1	60	175	250,000 bus.	10,000 00
Shafton Coal Co...........	63	8	71	170	77,500	20,000 00
Union Coke Works.........	44	......	44	200	Indefin'e.	24,710 51
Millwood Coal Company...	92	8	100	210	80,708	90,000 00
Emma Mines..............	23	......	23	300	22,500	38,812 00
Waverly Mines............	113	......	113	200	75,000	75,000 00
American Coke Works.....	....	......	11	250	6,766	7,566 25
Iron City Coal Works......	85	......	85	254	32,000	37,000 00
Home Coke Works.........	14	1	15	260	6,240	8,000 00
Fountain Mines............	16	2	16	275	21,000	17,000 00
Union Coal Works..........	63	2	65	225	16,000	....
Total reported........	2,510	78	2,588	213	1,098,688	....

RECAPITULATION—BITUMINOUS COAL—EMPLOYEES, LABOR AND PPODUCTION.

COUNTIES.	Number of men employed.....	Number of boys employed.......	Total No. of men and boys.......	Average days in operation.......	Production—tons..	Value............	Collieries reporting...........
Allegheny............	3,367	197	3,834	197¾	2,167,942	$1,651,501	30
Beaver.....................	100	5	105	......	21,500	34,400	2
Bradford..................	578	38	616	254½	178,312	187,227	2
Blair.......................	259	15	274	202	102,960	92,098	7
Cameron...................	44	5	49	91	10,000	13,000	1
Cambria...................	473	73	546	214¼	296,981	297,993	8
Centre.....................	197	14	211	......	100,333	99,433	3
Clarion....................	605	14	619	276	262,395	284,960	5
Clearfield	352	49	401	258	187,679	....	7
Elk.........................	176	1	177	......	102,175	153,217	3
Fayette....................	1,126	23	1,149	224	507,067	450,838	19
Greene.....................	9	3	12	......	1,852	1,584	5
Huntingdon...............	476	46	522	262½	76,996	81,020	5
Lawrence	251	17	274	232	73,150	119,247	3
Lycoming.................	407	36	443	260	169,504	329,000	1
M'Kean	236	29	265	275	55,603	109,959	2
Mercer.....................	174	9	183	141½	28,267	57,519	5
Somerset..................	91	......	91	300	56,478	73,421	1
Tioga.......................	1,383	52	1,535	......	554,599	....	4
Venango...................	15	......	15	125	3,635	....	1
Washington...............	1,075	55	1,130	192	274,696	245,312	16
Westmoreland.............	2,510	78	2,588	213	1,098,688	....	17
Total reported.........	13,653	757	14,412	*218.7	6,430,812	3,281,729	147

COAL CUTTING MACHINE.

The accompanying engraving represents a plan view of one construction of what is known as the "Monitor Coal Cutter," under the patents of Horace F. Brown. This machine was designed and built especially for the Fall Brook Coal Co.'s mines, at Antrim, Tioga county, Pa., where it is now in successful operation. It is especially adapted to that class of mines where the undercut must be made directly on the bottom, or within a few inches of it. Among other difficulties in the way of coal cutting by machinery is the varied formations in different coal measures, and so great is this variation that it has been found impracticable to meet all cases with one construction of machines.

The first machines under these patents were built for the block coal regions in Indiana, and worked in the mines of Niblack & Zimmerman, Alexander, at Brazil, Clay county, Indiana. In the upper vein the mining was made about one foot above the bottom, while in the lower vein the best results were obtained by mining one foot from the top, or at a heighth of 2′ 6″ to 3′ 6″. In the Fall Brook mines, at Antrim, and in all the surrounding coal measures, embracing the "Blossburg" regions, it is neces-

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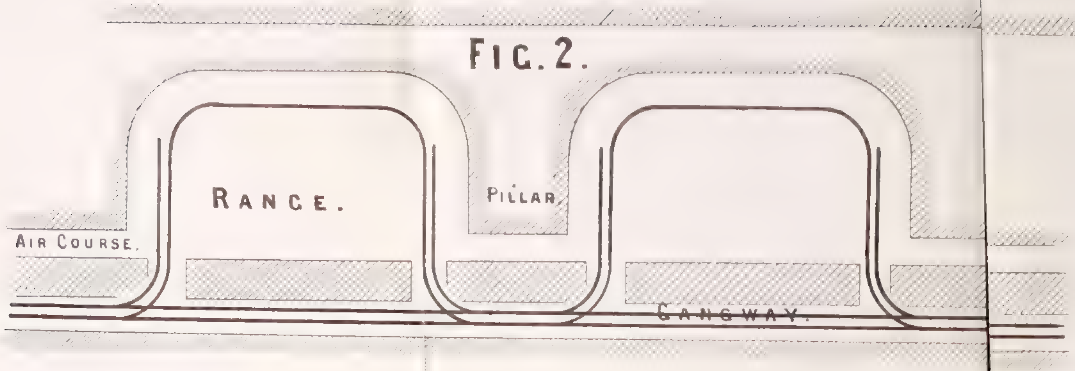
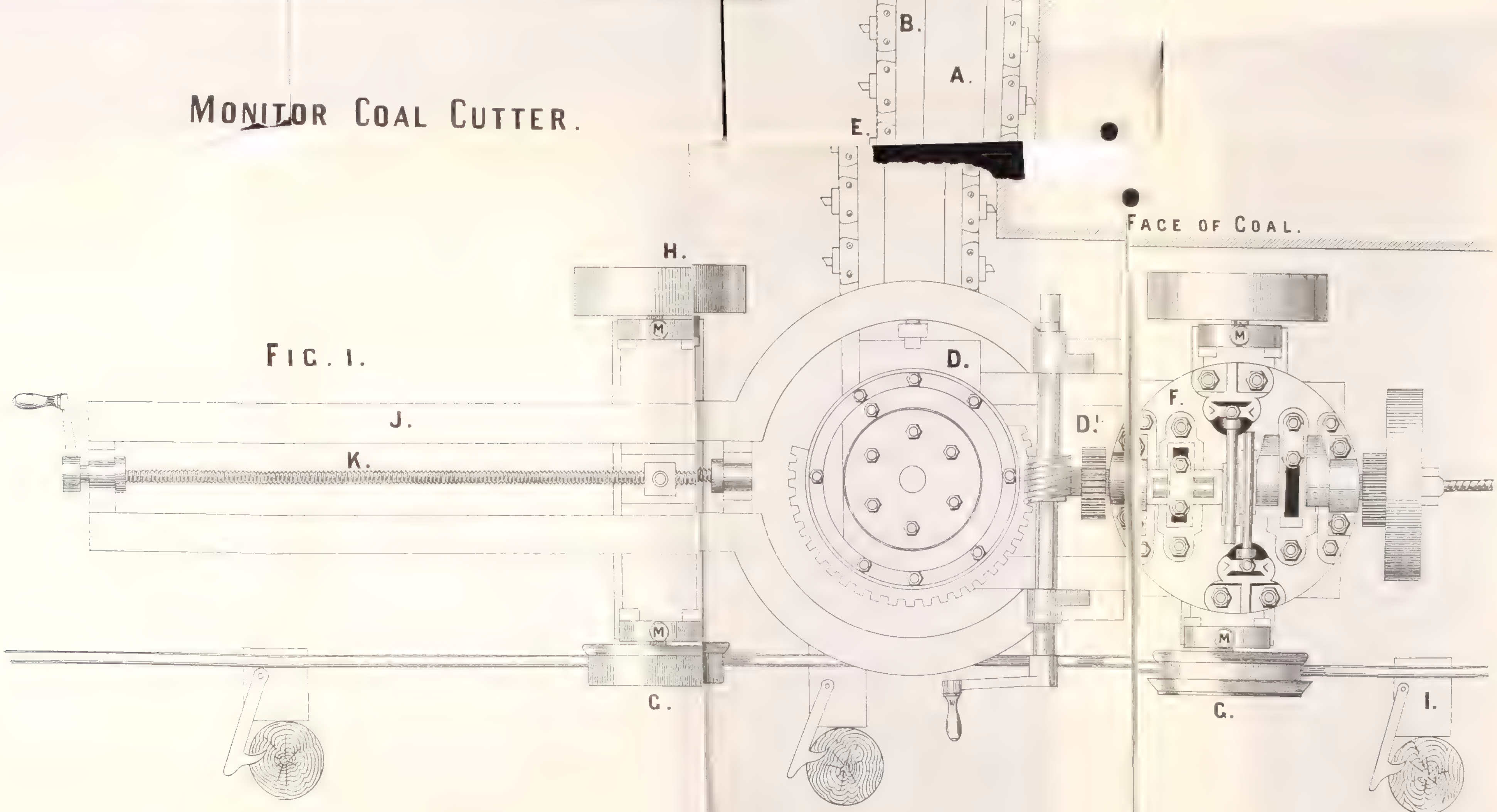
* Grand average.

FIG. 2.



MONITOR COAL CUTTER.

FIG. 1.



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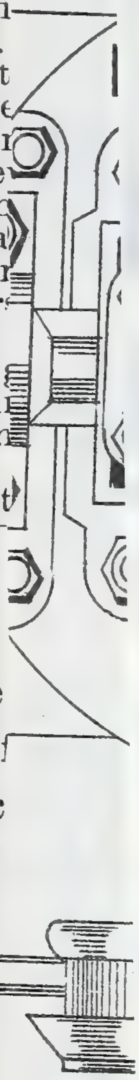

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sary to make the undercut directly on the bottom. Fig. 1 shows a plan view of the machine, and Fig. 2 a portion of the mine showing the arrangement of tracks, ranges, &c. Nearly all the mining in this county is done by means of driving up narrow ranges, and leaving alternate pillars to support the roof, and any machinery to mine successfully, must be so constructed that it can be readily moved from one range to another, and in fact, portability and adaptation to the mines are features of as paramount importance as the cutting mechanism itself.

In the machine under consideration all these requirements are admirably combined in figure 1. A shows the inner and supporting part of the cutter arm; this is joined to the frame D by means of a pivot hinge, that holds the arm rigid horizontally, but allows it to be raised or depressed on either edge, by means of which the cutter can be made to lead up or down in the coal, to follow the irregularities of the bottom to avoid interlaminated stratas of rock, &c. The arm can also be raised or lowered without otherwise changing its relative position to the machine. B is the outer portion of the cutter arm, and is grooved to A in such a manner that it can be thrown out or in, to lengthen or shorten the arm as required. Attached to B, is the wheel C, that acts as a carrying wheel for the chain E, at the outer extremity of the arm; at the other end of the arm, and attached to the shaft L, is a similar wheel that acts as a driver for the cutter chain. F, is a double cylinder vertical trunk engine 8″ bore and 7″ stroke. The whole is attached to the frame work J. This in turn is supported by the wheels G, H, &c. The wheels are all plain flanged wheels as shown by G. While working, the machine requires but one rail of the common T iron, 9 pounds per yard. The forward wheel is kept on the rail by means of the second flange G′, which is slipped on and held by means of thumb screws. The other two wheels are rimmed unto the broad flanges H, made in two or more sections which run directly on the bottom. When in shape for moving, the wheels, G H, are drawn to the end of the frame J, by the screw K, and the cutter arm swung under the frame J by means of the screw shaft D′, which engages the teeth of the segmental gear attached to the frame D. The wheels at both ends of the machine are on pivoted axles, and can be so pivoted that the machine will pass any curve ordinarily found in a mine. To put the machine at work it is run into the range to the end of the double rail as shown in Fig. 2. At the end of the short rail, one section of the flange H is placed, and the machine drawn forward until the wheel rests in the flange which is so constructed that it keeps the wheel at the same height as when on the rail. The other section is then laid on and fastened to the first by spring bolts, and the wheel then presents a continuous broad tread to the bottom. At the same time the flange or ring G′, is put on the opposite wheel, forming a groove that guides the machine on the rail. The whole is drawn forward until the hind wheel reaches the end of the rail, when it is also run into the flange. Then the cutter arm is swung out and the wheels G and H run forward to the position shown in figure 1. This is done for several reasons: 1st, it enables the machine to be worked around a much smaller curve than when coupled out long; 2d, the machine is more readily adapted to the unevenness of the bottom; and is also more rigid. The whole machine is then lowered by means of the screws M M M M, at each wheel, and the arm A is also lowered until its under surface is about even with the bottom of the rail. The machine is then fed forward by means of a power windlass, operated by air. (This is not shown on the engraving.) The windlass consists of an upright drum driven by a small rotary engine, so geared that it will wind slowly enough for the lightest feed, or fast enough to pull the machine up the grade from the gangways very rapidly. The feed can be varied instantly by the throttle valve to suit the varying stratas that are being cut, and from the fact that in many places in the same breast, one yard can be cut in half the time with the same power that it would require to cut the next yard. This sensitiveness is in the mechanism used in feeding is of great importance. When the machine reaches the opposite short rail, the wheel is run out of the broad flange on to the rail; the wheels G and H run back, the cutter arm swung under the frame and the whole raised so the cutters will clear the rail. The flange G′ removed and the machine moved to the next range where the coal can be economically "loaded out." If under-cut above the rail, the double rail would be continued across the face and such time now required to move the machine saved. After the under-cut is made, the coal is "loaded out," the rail brought forward and the operation repeated. The manner of securing the rail to the props by means of the chain I, and hooks, is clearly shown in figure 1. In the mines where this machine is now at work, the cutting is done below the coal in a mixture of "splint, bony and rough" coal, much of which is very hard and none of it marketable. The capacity of the machine, of course, varies greatly with the nature of the material cut. The following table will show what the machine is doing daily in what is about the average hardness of splint coal:

Weight of machine	3,800 lbs.
Depth of cut (extreme)	4 feet.
Do......(average)	3 ft. 6 in.
Thickness cut out	2 ft. 6 in.
Pressure used per square inch	25 lbs.
Cut along the face, (average) per hour	20 yds.

Exceptional work, 15 yards in 20 minutes ; 30 yards in 55 minutes ; 5 yards in 4½ minutes.

Space between props and coal........................ 42 in.

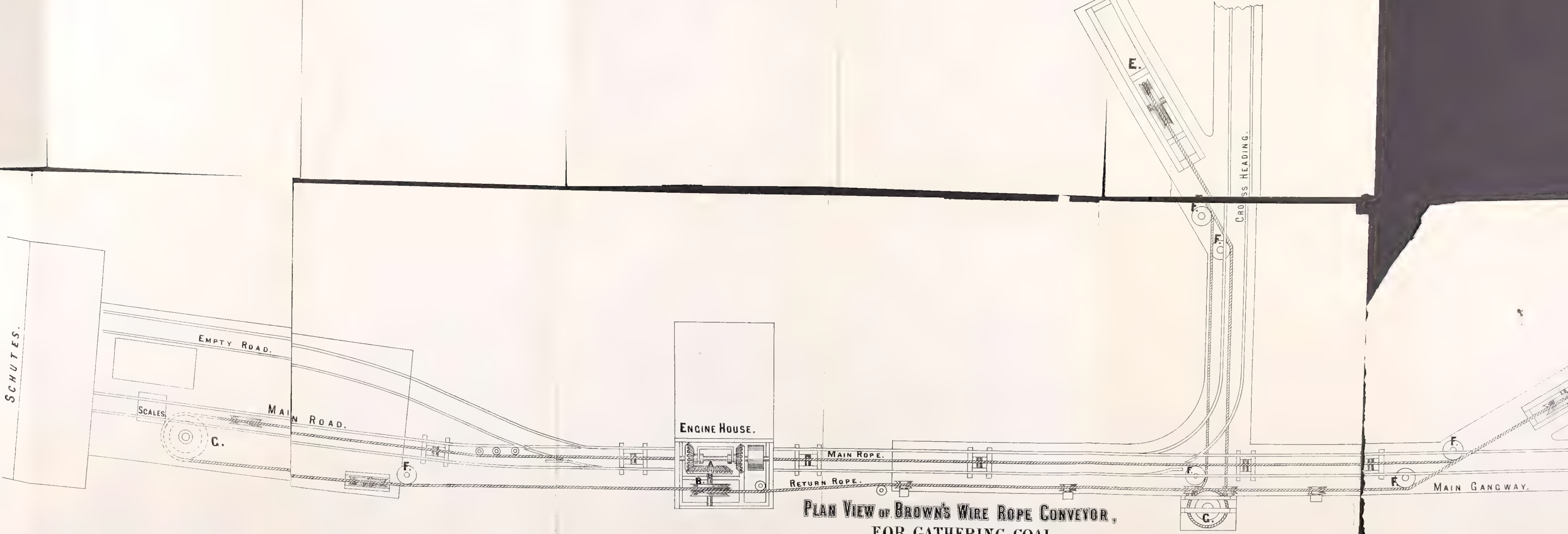
Gauge of track... 29 in.

ENDLESS WIRE ROPE.

The accompaning illustration represents a plan for gathering coal by means of an endless wire rope, now in use in the Fall Brook Coal Co.'s mines, in Antrim, Pa.

This mine has a single gangway which necessitates the double use of the track. To accomplish this the driving gears, A, are so arranged that the rope can be run either way by throwing in either the right or left hand pinion. At this mine the engine house is placed midway between the schute and the mouth of the drift, partly to obviate the danger of fire, and partly owing to the nature of the ground. Commencing at the dotted wheel C, under the schute, the main rope runs in the centre of the track below the line of the rails, to the wheel D, which is placed near the head of the gangway, and so arranged that the gangway can be extended at will. Passing under the wheel D, the return rope comes out along the top supported by suitable wheels or rollers to the wheel C. Passing once around this wheel it comes on to the driving wheel B. To get the necessary friction the rope passes entirely around this wheel and so on to the place of beginning. In practice the empty wagons or pit cars are attached to the main rope by means of a clutch (not shown) which may be applied at any time while the rope is running, until drawn to any desired point in the main gangway. By means of a rope passing from the clutch to the rear wagon, the whole trip, except the special wagon to which the clutch is attached, can be run on to the cross heading and drawn to any range as required, in the same manner. After the wagons are all in to place, a signal is given to the engineer, the motion of the rope reversed, when the wagons are gathered from all the crossheadings to the main gangway and brought out. The wheel C at the foot of the cross heading is placed at the top of the gangway and acts as a driver for the heading rope. The heading rope passes around a wheel immediately under the wheel C, which runs loose on the same shaft to which C is keyed, and is driven by means of a clutch which can be thrown out so that none but the main rope need be in constant motion. Where there are several cross headings this saves the wear and power that would otherwise be required, as each heading rope stands still only when in actual use. The wheel E at the end of the cross heading is placed on a sliding frame which can be run back to give the proper tension to the rope. The main rope is tightened in the same manner by means of a sliding frame under the schute. The engine used is a 16x24 cylinder geared 4 to 1 of the driving wheel B. The speed of the rope averages 3.65 miles per hour in the Fall Brook mines. At this speed the rope can be clutched at any point without injury to the wagons. Where the distance is great the speed can be increased to any desired point compatable with safety. The rope will work around curves of a comparatively small radius, and as the trips can follow each other closely, an immense amount of coal can be handled per day on a single rope. Where a double road can be laid, both ropes can be run on the bottom, the one taking in the empty trips and the other bringing out the full ones. In mines where the coal is low the item of blasting rock to make room for a mule or horse to travel, is the most expensive of all the dead work. In using the rope system no blasting to get high roadways is required, which makes a saving greater than the cost of the rope and necessary appliances, while the running expenses are far less than where the same work is done by mules.

HORACE F. BROWN,
Mining Engineer, Antrim, Tioga county, Pa.



PLAN VIEW OF BROWN'S WIRE ROPE CONVEYOR,
FOR GATHERING COAL.

the proper tension to the rope. The main rope is tightened in
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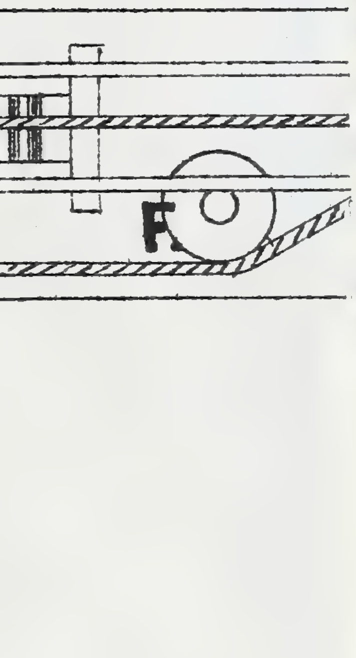

ANTHRACITE COAL STATISTICS.

SCHUYLKILL COUNTY.

GATE VEIN COLLIERY.

Gate Vein Coal Company, Pottsville, Pa.

Quantity of tons and value in dollars of annual product: None shipped and of no value.

Whole number of persons employed: 50; one superintendent at mines, and 15 carpenters.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	1	......	....	....	....	Started building colliery and driving slope June, 1876. Started breaker 1st January, 1876.
Miners on wages.....	10	......	$2 25	....	....	
Outside laborers.....	30	......	1 33	....	....	
Inside laborer.......	10	......	1 80	....	....	
Outside mechanics...	15	......	2 25	....	....	
Mining overseer.....	1	......	4 00	....	....	

Characteristics of Colliery.—Colliery is on the vein known as the Gate Vein, and is located just north and west of the borough of Pottsville. The vein is red ash, and from six to nine feet thick. The slope is sunk two lifts, and is new in all departments.

GATE VEIN COAL COMPANY,
Per Howell Fisher, *Supt.*

COLKET COLLIERY.

Thos. J. Woolf, assignee, Tremont, Pa.

Quantity of tons and value in dollars of annual product: 14,701.06 tons. $33,813.

Whole number of persons employed: 184.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	51		$2 53		101 days.	
Miners on wages	23		1 95		"	
Outside laborers	12		1 50		"	
Inside laborers	16		1 65		"	
Outside mechanics	3		2 23		"	Carpenter and blacksmith.
Inside mechanics	1		2 16		"	Carpenter.
Outside mule drivers		4		$0 71	"	
Inside mule drivers,		7		1 33	"	
Slate pickers		32		63	"	
Mining overseers	1		3 75		"	
Fan boys		9		59	"	
Engineers	2		2 50		12 mos.	
Assistant engineers	2		2 00		"	
Firemen	3		1 50		"	
Contractors' laborers,	18		1 73			

(Signed) THOS. J. WOOLF, *Assignee.*
per P. L. LEBO, Clerk.

WEST END.

Thos. J. Woolf, Assignee.

Quantity of tons and value in dollars of annual product: 16,166.02 tons; $38,798 64.

Whole number of persons employed: 126.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	39		$2 70		153 dys.	
Miners on wages	6		2 00		"	
Outside laborers	14		1 67		"	
Inside laborers	10		1 67		"	
Outside mechanics	2		2 25		"	Carpenter & blacksmith.
Inside mechanic	1		2 00		"	
Outside mule drivers		3		$ 71	"	
Inside mule drivers,		3		1 00	"	
Slate pickers		28	55		"	
Mining overseer	1		3 75		"	
Fan boys		6		59	"	
Engineers	3		2 17		12 mos.	
Firemen	2		1 67		"	
Contractors' laborers	8		1 73			

P. L. LEBO, *Clerk*
For T. J. WOOLF, *Assignee.*

PHILLIPS'.

R. P. Phillips & Co., Mahanoy City, Pa.

Quantity of tons and value in dollars of annual product: 23,870.15 tons; $67,477 03.

Whole number of persons employed: 64.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	30				190¾ dys.	
Outside laborers	3	3	$1 67	$1 33		
Inside laborers	5		1 82			
Outside mechanic	1		2 50			
Outside mule driver		2		1 33		
Inside mule drivers,		3		1 41		
Dumpers		2		1 33		
Slate pickers		13		67		
Mining overseers	2		3 00			

R. PHILLIPS & CO.

TURKEY RUN.

Haas, Brenizer & Co., Shenandoah, Pa.

Quantity of tons and value in dollars of annual product: 61,117 tons, at $2 50 per ton, $152,792 50.

Whole number of persons employed: 295.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	90		$3 00		One hundred and forty days.	
Miners on wages	15		2 00			
Outside laborers	25		1 50			
Inside laborers	40		1 65			
Outside mechanics	8		2 50			
Inside mechanic	1		2 50			
Obtside mule drivers	6		1 50			
Inside mule drivers,	10		1 65			
Slate pickers		100		$0 75		

(Signed) HAAS, BRENIZER & CO.

per D.

SHENANDOAH CITY COLLIERY.

James Neill, Trustee, Pottsville, Pa.

Quantity of tons and value in dollars of annual product: $61,604\frac{10}{100}$; $278,978 99.

Whole number persons employed: Between 250 and 300—number varies monthly.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	128		$6 89		*	
Miners on wages	70		1 95			
Outside laborers	24	15	1 65	$1 00		
Inside laborers	40	16	1 65	65		
Outside mechanics	8		2 25			
Outside mule drivers		8		1 25		
Inside mule drivers	7	6	1 50	1 35		
Weigh masters						All coal weighed by the Reading railroad company's weigh master.
Slate pickers		55		67		
Mining overseers	4		$85 p. mo.			
Superintendent	1		$2,500 yr.			
Engineers	7		$1 90			
Firemen	3		1 66			
Stable	5		2 03			
Shippers	2		1 79			
Clerk	1		$70 p. mo.			

Characteristics of Colliery—This colliery is located on the Mammoth and Buck Mountain veins, in Shenandoah district. Mammoth vein worked by three slopes, and Buck Mountain by drift. Drift is in about 1,800 yards, breast about 250 yards, size of vein 9 feet, size of Mammoth between 40 and 300 feet. Power used—steam and compressed air. In use about 35 horses and mules, consuming about 250 bushels of corn and 6 tons of hay per month. Water kept out of slope by two 9-inch steam pumps. Since the opening of colliery in 1865, there have been used 362 tons 25 lb. T rail. Cost in 1864, $160 00 per ton; in 1876, $42 00.

The amount, $278,978 99, represents actual gross receipts for coal shipped. Out of this were paid the following amounts: Advance tolls, $14,786 58, (from Philadelphia); commission, $15,380 05; canal tolls, $10,839 97; tolls to Richmond, $86,954 82; lateral tolls, $16,483 85.

The loss for year ending December 30, 1875, was $4,956 86, not including interest on original investment, about $300,000 00.

The amount paid contract miners is large on account of their being obliged to pay from $3 00 to $3 50 per day from it for powder, oil, &c.

(Signed) J. O. ROADS, *Supt.*
Pottsville, Schuylkill co., Pa.

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*20 days average during last 7 months—no work done first 5.

BEAR RUN.

Wiggan & Triebel, Mahanoy City, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product: 52,915$\frac{2}{20}$ tons; $144,410 92; no deductions or commissions taken off.

Whole number of persons employed: 159.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	27	......	$3 11	......	140	This is averaged as near as we can get at it.
Inside repairmen....	3	....	one 2 00 two 1 95	....	140	
Outside laborers.....	17	......	1 54	......	......	
Inside laborers......	33	2	1 77½	$ 79	......	
Outside mechanics..	5	......	2 27	......	273	
Outside mule drivers	....	4	....	1 25	140	
Inside mule drivers,	2	2	1 72	1 55	......	
Dumper.............	2	......	1 50	......	......	
Slate pickers.........	....	38	....	93	......	
Mining overseer.....	1	......	....	......	full.	$125 per month.
Breaker engineer....	1	......	2 25	......	189	
Slope engineer.......	2	......	....	......	full	$65 per month.
Man in charge of gig,	1	......	2 25	......	"	time, or 227 days for 1875.
Firemen.............	2	......	2 00	......	"	" " "
Outside boss.........	1	......	....	......	"	$80 per month, $960
Slate picker boss.....	2	......	1 67	......	180	
Stableman, outside..	1	......	....	......	full.	$50 per month, house and coal
Stableman, inside....	1	......	2 25	......	172	
Shipper	1	......	2 17	......	159	
Platform boss........	1	......	....	......	full.	$960 per year.
Gangway laborer....	10	......	1 95	......	140	

The foregoing report is as near as we can get at it. We do not keep an account of time worked by men having contract work. The time worked is based upon the time worked by the laborers in and outside of the mines. We have taken the months of July, October and November, 1875, and averaged the amounts made during those three months. The labor stated in the report does not include all the labor done about the colliery. We had during the year, a number of carpenters and stone masons at work doing repairs to breaker structure, and stone and brick work at the boilers.

PHILIP CONRAD, *Super't.*

YORK FARM COLLIERY.

L. E. Leuellin.

Quantity of tons and value in dollars of annual product: Total mined, 932 tons; total value, $25 50.

Whole number of persons employed: 9.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on wages.....	2		$2 25		6 mos.	Commenced opening in July, 1875.
Outside laborer......	1	3	1 66	$0 75	"	
Inside laborers......	2		1 66		"	
Outside mechanic....	1		1 75		"	

Characteristics of Colliery.—Slope sunk on red ash vein, five to six feet thick. Present depth, 50 yards, and about 250 yards gang-way driven Worked only for retail trade, having no railroad.

(Signed) L. E. LEUELLIN.

LAWRENCE.

Lawrence, Merkel & Co. Colliery, P. O. address, Frackville, Schuylkill county. Office, Minersville, Schuylkill county.

Quantity of tons and value in dollars of annual product: 66,148.05 tons. Value, $195,361 47.

Whole number of persons employed: 263.

CLASSIFICATION.	No. of men.....	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract ..	74					No record.
Miners on wages.....	8		2 02½		154¾	In giving the time worked by laborers, drivers, dumpers and slate pickers we have given the time the breaker was in operation, as the nearest average we can make; for the balance of employees we have taken the days actually worked by each party as it stands on our books.
Outside laborers.....	30		1 64⅓		"	
Inside laborers......	37		1 79½		"	
Outside mechanics ..	6		2 31		331	
Inside mule drivers,	2	4	1 72½	134	154¾	
Dumper	1		1 50		154¾	
Slate pickers		88		87⅛	154¾	
Mining overseers....	3		4 11		365	
Shipper..	1		2 25		160½	
Watchman	1		1 28⅔		417	
Hoisting and pump-engineers..........	6		2 91¼		365	
Firemen............	2		2 21⅝		365	

LAWRENCE, MERKEL & CO.

DELANO COLLIERY.

Samuel Atkinson, station H, Philadelphia.

Quantity of tons and value in dollars of annual product: 24,221$\frac{18}{25}$ tons; Value, 1¼, $60,214 37.

Whole number of persons employed: 129.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	46	......	$3 50	....	5½ mos.	
Outside laborers.....	14	......	1 50	....	5½ "	
Inside laborers.......	15	......	1 65	....	5½ "	Three 5½ mos., one 12 mo.
Outside mechanics...	4	......	2 50	....	....	
Inside mechanic.....	1	......	2 50	....	12 mos.	
Outside mule drivers	2	......	1 16	....	5½ "	
Inside mule drivers,	4	......	1 16	....	5½ "	
Dumper.............	1	....	1 50	....	5½ "	
Slate pickers	......	33	....	66⅔	5½ "	
Mining overseer.....	1	......	5 00	....	12 "	
Slate picker boss.....	1	......	1 80	....	5 "	
Inside boss	1	......	3 33⅓	....	12 "	
Steam engineers.....	3	......	3 00	....	....	One 5 mos., two 12 mos.
Firemen.............	2	......	2 00	....	12 mos.	
Clerk & outside boss,	1	......	3 00	....	12 "	

Owing to the strike, the colliery did not start till June 20, 1876, and stopped the first week in December, for repairs.

SAMUEL ATKINSON.

KEHLEY'S RUN COLLIERY.

Thomas coal company, Philadelphia and Shenandoah, Pa.

Quantity in tons and value in dollars of annual product: About 80,000 tons; about $200,000.

Whole number of persons employed: About 350.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	42	......	$3 13	......	155	
Miners on wages.....	56	......	1 95	......	155	
Outside laborers.....	57	......	1 50	......	155	
Inside laborers......	57	7	1 71	$0 75	155	
Outside mechanics ..	6	......	2 20	......	327	
Inside mechanics....	4	......	2 10	......	197	
Outside mule drivers	5	......	1 79	......	155	
Inside mule drivers,	9	......	1 65	......	155	
Weigh master	1	......	1 66	......	365	
Dumpers	3	......	1 50	......	155	
Slate pickers	24	74	1 97	83	155	
Mining overseers....	3	......	3 05⅓	......	365	
Civil engineer........	1	......	....	......	....	
Engineers	3	......	1 90	......	285	
Firemen.............	2	......	1 83	......	365	
Watchman	1	......	1 50	......	365	

THOMAS COAL COMPANY.
per Robt. C. Thomas.

CUYLER.

S. M. Heaton & Co., Raven Run, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product: 55,317.10 tons ; $110,635.

Whole number of persons employed: 297.

CLASSIFICATION.	No. of men......	No. of boys	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	125	......	Average. 2 75	......	140 days.	
Miners on wages.....	......	......	1 95	......		
Outside laborers.....	65	......	1 50	......		
Inside laborers	4	......	1 65	......		
Outside mechanics...	10	......	2 17	......		
Inside mechanics....	4	......	2 33⅓	......		
Outside mule drivers	3	......	1 50	......		
Inside mule drivers,	11	......	1 50	......		
Dumpers	1	......	2 40	......		
Slate pickers	20	52	1 25	65		
Mining overseers....	2	......	4 00	......		

S. M. HEATON & CO.

WILLIAM PENN.

Name of corporation or parties operating the same and post office address: Not incorporated; owned by Seyfert, M'Manus & Co., Reading, and E. G. Brooke, Birdsboro'.

Quantity of tons and value in dollars of annual product: 107,000 tons, @ $2 00, $214,000.

Whole number of persons employed: 535.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
			Average.			
Miners on contract...	120		$3 50		150 dys.	
Miners on wages	10		2 00			
Outside laborers.....	70		1 50			
Inside laborers......	35	15	1 75	$1 12		
Outside mechanics ..	20		2 25			
Inside mechanics....	3		2 50			
Outside mule drivers	5		1 25			
Inside mule drivers,	10		2 00			
Dumpers...........	5		1 50			
Slate pickers...........		90		1 00		
Mining overseers....	2		3 50			
Superintendent	1					
Clerks...............	3		2 00			
Stable bosses........	3		2 00			
Watchmen	2		2 00			

Characteristics of Colliery.—The colliery consists of a shaft sunk in 1869, 300 feet deep, through a rock, to the Mammoth vein, opening up 200 yards of the vein on an angle of 30°, with an average thickness of 30 feet, and a vein of 1½ miles. The cars, holding 100 feet, are hoisted up the shaft at the rate of one a minute, and run to the breaker by gravity. The breaker has a frontage of 136 feet, with a height of 102 feet, and is built with all the modern improvements capable of preparing coal for the city trade equal to any going to market.

W. H. LEWIS, *Supt.*

ELLSWORTH.

John R. Davis.

Quantity of tons and value in dollars of annual product: 15,000 tons, valued at $37,500.

Whole number of persons employed : 45.

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year ...	REMARKS.
Miners on contract...	9		$1 95		9 mos.	
Outside laborers.....	5		1 50			
Inside laborers......	7		1 67			
Outside mechanics ..	3		2 00			
Outside mule driver,		1		$1 00		
Inside mule drivers,		2		75		
Slate pickers.........		18		50		
Mining overseer.....	1		4 00			

JOHN H. DAVIS, *Super't.*

BIG MINE RUN.

Jeremiah Taylor & Co., Ashland, Pa.

Quantity of tons and value in dollars of annual product: $50,467\frac{71}{20}$ tons; $130,039 80, value of total product.

Whole number of persons employed : 350 on average.

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men.....	Daily wages paid boys	Time in operation during year ...	REMARKS.
Miners on contract ..	85		$3 20	$ 75	5 mos.	
Miners on wages.....	25		2 25			
Outside laborers.....	65		1 50			
Inside laborers	60		1 95			
Outside mechanics ..	10		2 50			
Outside mule drivers		5		1 35		
Inside mule drivers,	10		1 90			
Slate pickers		90		75		

Our colliery is in first class order, both as to shipping capacity and facility to clean and prepare coal. Our inside workings are entirely above water level. We are working the Buck Mountain vein exclusively, and is accessible only by means of rock tunnel 225 yards across measures. The workings are upon land owned by the Locust Mountain coal and iron company.

JEREMIAH TAYLOR & CO.
Per ALLEN.

EAST MAHANOY.

Focht, Whitaker & Co., Mahanoy City, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product: 50,000; $125,000.

Whole number of persons employed: 236.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	76	......	....	......	7 months.	
Outside laborers.....	25	......	$1 66	......		
Inside labors........	40	......	1 70	......		
Outside mechanics...	4	......	2 50	......		
Outside mule drivers......		2	....	$0 75		
Inside mule drivers,	6	......	1 50	......		
Slate pickers............		80	....	60		
Mining overseers....	3	......	4 00	......		

FOCHT, WHITAKER CO.

GREENBACK.

Thomas Gorman, Port Carbon, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product: 20,275.03; $53,353 81.

Whole number of persons employed: 151.

CLASSIFICATION.	No. of men......	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	70	......	76 c. per car.	......	5 mos.	
Outside laborers.....	12	......	$1 66	......	"	
Inside laborers......	12	... ..	2 00	....	"	
Outside mechanics...	3	......	2 50	......	"	
Inside mechanics....	2	......	2 50	......	"	
Outside mule drivers,	3	......	1 25	......	"	
Inside mule drivers,	6	......	$10 per wk.	......	"	
Dumpers............	2	......	9 "	......	"	
Slate pickers.........	40	......	90 c.	......	"	
Mining overseers....	1	......	4 00	......	12 mos.	

THOMAS GORMAN.

WEST LEHIGH (HICKORY) COLLIERY.

I. C. Winlack, Middleport, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product : 18,422.06 tons. $44,628 21.

Whole number of persons employed : 79.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	16	......	$2 75	....	243 days.	
Miners on wages.....	11	......	1 95	....		
Outside laborers.....	10	......	1 50	....		
Inside laborers......	10	......	1 65	....		
Outside mechanics...	2	......	2 00	....		
Outside mule driver,	......	3	1 25	$1 25		
Inside mule drivers.	......	3	1 65	1 65		
Dumpers.............	......	3	1 50	1 50		
Slate pickers.........	......	20	....	75to 50c.	per day	
Mining overseer.....	1	......	3 00	....		

Characteristics of Colliery.—White Ash Colliery, water level supposed to be on Mammoth vein.

I. C WINLACK.

STUARTVILLE COLLIERY.

William Montelius, 327 Walnut street, Philadelphia.

Quantity of tons, 44,276.

Whole number of persons employed : 286.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	83	......	$3 28	....	$129\frac{1}{4}$ ds.	
Miners on wages.....	2	......	2 05	....	....	
Outside laborers.....	20	......	1 58	....	....	
Inside laborers......	67	......	1 74	....	....	
Outside mechanics...	5	......	2 25	....	....	
Inside mechanics....	2	......	2 30	....	....	
Outside mule drivers	.....	4	....	$1 20	....	
Inside mule drivers,	......	14	....	1 15	....	
Dumpers	2	......	1 77	....	....	
Slate pickers.........	......	82	....	78	....	
Mining overseers....	1	......	4 50	....	....	
Outside superinten't,	1	......	3 60	....	....	
General superinten't,	1	......	....	....	....	
Clerk................	1	......	3 00	....	....	
Stable boss	1	......	1 80	....	....	

Slope sunk on Mammoth vein 50 yards from surface. Slope inside on Mammoth, 100 yards in depth. Tunnel from north to south dip of Mammoth. Tunnel from Mammoth to Skidmore.

A. M. MONTELIUS, *Gen. Super't.*

DIAMOND.

W. H. Whitaker & Co., No. 210½ Walnut street, Philadelphia.

Quantity of tons and value in dollars of annual product: 9,109.03 tons=$31,917 75.

Whole number of persons employed: 152.

CLASSIFICATION.	No. of men	No. of boys	Weekly wages pd men	Weekly wages pd boys	Time in operation during year	REMARKS.
*Miners on contract	39				6 mos.	Weekly wages:
Miners on wages	10					$11 93 lowest; $12 40 highest.
Outside laborers	13					9 00 to $9 50.
Inside laborer	23					10 10 lowest; $10 50 highest.
Outside mechanics	4	1				14 00 to $15 00.
Outside mule drivers		2				4 50 to $5 00.
Inside mule drivers,		6				Wages paid these were all different, from $6 00 to $8 50.
Slate pickers		24				The wages paid these were from $3 00 up to $4 00.
Mining overseers	2					
Pushers		12				These had different wages, from $4 50 to $6 00.
Door boys, &c.		7				These had different wages, $4 50 the lowest.

We had on an average the number of men and boys employed that are marked in the proper columns, with the weekly wages paid. To fill this out properly would take a full month's work. Now, if I had the inclination to devote this month's time to the filling of this out properly, I have not got the time at my disposal to do so; neither have any set of law-makers the right to impose labor on anybody without compensating him for it.

JOHN CARTER,
Minersville, Pa.

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* We don't know the daily wages of the miners. Their time is never kept. They work not by the day, but by the wagon or yard.

GILBERTON.

The Gilberton coal company, Gilberton, Pa.

Quantity of tons and value in dollars of annual product: 50,436$\frac{13}{20}$ tons; $144,432 78.

Whole number of persons employed, 220.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract...	18	......	$3 85	......	97 days.	
Miners en wages.....	16	......	2 29	......	141 "	
Outside laborers.....	35	2	1 50	$1 35	221 "	
Inside laborers......	37	......	1 80	......	130 "	
Outside mechanics ..	17	.....	2 31	......	12 mos.	
Outside mule drivers	.....	5	......	1 08	130 days.	
Inside mule drivers,	......	9	......	1 55	130 "	
Dumpers	2	......	1 60	......	130 "	
Slate pickers.........	23	48	1 35	72	130 "	
Mining overseer	4	......	4 60	......	12 mos.	
Door tenders (inside)	......	4	......	1 00	130 days.	

(Signed) H. L. WILLIAMS.

PINE CREEK COLLIERY.

William Taggart.

Quantity of tons and value in dollars of annual product: 15,866 tons; $39,665.

Whole number of persons employed: 135.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid to boys.........	Time in operation during year....	REMARKS.
Miners on contract...	64	......	$2 50	....	114 dys.	
Miners on wages.....	4	......	2 17	....	"	
Outside laborers.....	15	......	1 67	....	"	
Inside laborers......	12	......	1 83	....	"	
Outside mechanics ..	6	......	2 33	....	"	
Outside mule drivers	......	3	....	$ 90	"	
Inside mule drivers,	......	4	....	1 33	"	
Dumpers	2	......	1 67	....	"	
Slate pickers.........	......	24	....	60	"	
Mining overseer......	1	......	3 50	....	"	

Characteristics of Colliery.—The coal was taken from the mines by the Lehigh Valley railroad company. The breaker is a single one, being capable of preparing about 250 tons of coal per day.

WM. TAGGART.
Per DAVIS.

STANTON.

Miller, Hoch & Co., Pottsville, Pa.

Quantity in tons and value in dollars of annual product for 1875: 61,461.03 tons; $155,731 36.

Whole number of persons employed: 247.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract...	42	......	$3 50	......	160 dys.	There was a total suspension of work from Jan. 1, 1875, to about middle of June, 1875.
Miners on wages.....	7	......	2 25	......	....	
Outside laborers.....	35	6	1 50	$1 25	....	
Inside laborers	40	4	1 75	1 25	....	
Outside mechanics ..	5	......	2 75	......	....	
Outside mule drivers	......	6	......	1 25	....	
Inside mule drivers,	3	3	1 25	1 25	....	
Dumpers	2	......	1 50	......	....	
Slate pickers	20	70	1 35	75 c.	....	
Mining overseer.....	1	......	5 00	......	....	
Engineers...........	3	......	3 00	......	....	

Characteristics of Colliery.—Stanton Colliery is in the Mahanoy Valley, near Mahanoy Plane, Schuylkill county.

Coal mined is a White Ash coal from the Mammoth veins and South Dip. Opening is by slope, below Coates' Level.

MILLER, HOCH & CO.,
Per DUTTER.

ENTERPRISE.

J. R. Cleaver, Wellington and Jackson Cleaver.

Quantity of tons and value in dollars of annual product: 10,963 tons; value, $25,000.

Whole number of persons employed: 60.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	22	......	....	......	6 mos.	
Miners on wages.....	1	......	$12 20	......	"	
Outside laborers.....	6	......	10 40	......	"	
Inside laborers......	10	......	9 50	......	"	
Outside mechanic ...	1	......	2 25	......	"	
Outside mule driver,	......	1	....	$1 33	"	
Inside mule drivers,	......	3	....	1 50	"	
Slate pickers.........	......	16	....	50	"	
Mining overseer.....	1	......	4 33	......	"	

(Signed) J. R. CLEAVER.

KALMIA.

Phillips & Sheafer, Orwin post office.

Quantity of tons and value in dollars of annual product: 82,778 tons $185,000.

Whole number of persons employed: 197.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	51		$2 70		274 dys.	
Miners on wages	5		2 25			
Outside laborers	15		1 66⅔			
Inside laborers	11		1 91			
Outside mechanics	3		2 50			
Inside mechanic	1		2 33⅓			
Outside mule drivers		3		$ 83⅓		
Inside mule drivers,	4	3	1 83⅓	1 14		
Dumpers	2	1	1 66⅔	83⅓		
Slate pickers	8	55	1 50	60		
Mining overseers	3		4 72			
Door tenders		3		73½		
Stable boss	1		1 92⅓			
Shute bosses	2		1 66⅔			
Contractors' laborers,	26		2 00			

THOMAS H. PHILLIPS, *Super't.*

FURNACE COLLIERY.

Atkins Bros., Pottsville.

Quantity of tons and value in dollars of annual product: 61,930 tons; $160,000.

Whole number of persons employed: 200.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	50		$3 00		12 months.	
Miners on wages	10		2 00			
Outside laborers	27		1 80			
Inside laborers	52	2	1 90	$1 20		
Outside mechanics	13		2 25			
Outside mule driver,		2		1 05		
Inside mule drivers,		8		1 40		
Dumpers	2		1 80			
Slate pickers		30		75		
Mining overseer	4		4 00			

ATKINS BROS.
per S.

BLACK HEATH.

Wm. H. Harris, Minersville, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product: 19,122.13 tons. Cannot give the value of the coal. Account in dispute with the parties who sold the coal.

Whole number of persons employed: 230 during year, not all at same time.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men*..........	Daily wages paid boys†........	Time in operation during year....	REMARKS.
Miners on contract...	59	....	....	....	258 days.	Cannot say what miners working on contract make per day, the wages here given is for day work. *Miners $13, drop to $11 70 per week. Inside laborers $11, drop to $9 90. Outside laborers, $10, drop to $9. †$2 50 to $4 50 per week. 41⅔ to 75c. per day.
Miners wages........	18	....	....	....		
Outside laborers.....	36	....	....	....		
Inside laborers......	20	....	....	....		
Outside mechanics ..	52	....	....	....		
Outside mule drivers	2	....	....	....		
Inside mule drivers,	4	....	....	....		
Dumper	1	....	....	....		
Slate pickers	....	36	....	....		
Mining overseer.....	1	....	....	....		
Outside boss.........	1	....	....	....		

Characteristics of Colliery.—Water level. Fine burning white ash coal. Single breaker. Can ship about 150 tons per day. Two openings. Six gangways. Veins small, from 3½ to 7 feet thick. Four veins. Make no Lump or Steamboat coal, all prepared coal. Working on three tracts of land, as follows: Mine Hill, Dundass & Herbine, South Cass township, Schuylkill county, Pa.; Wolf Creek, branch of M. H. & S. H. R. R. Colliery will last at the above rate of shipment, about fifteen years.

WM. H. HARRIS.

GIRARD COLLIERY.

T. Garretson, Pottsville.

Quantity of tons and value in dollars of annual product: 45,862$\frac{11}{20}$ tons; value, $117,984 90.

Whole number of persons employed: 250.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	50	......	....	......	135 dys.	
Outside laborer	36	......	$9 p. week.	......	....	
Inside laborers	60	......	11 "	......	....	
Outside mechanics...	11	......	2 75 p. day	......	....	
Outside mule drivers	6	......	7 p. week.	......	....	
Inside mule drivers,	7	......	8 50 "	......	....	
Slate pickers	77	......	4 p. week.	......	....	
Mining overseers....	3	......	1,200 p. y'r.	......	....	

T. GARRETSON.

PEAK MOUNTAIN COLLIERY.

George Wilson & Benjamin Evert, Pottsville.

Annual product: 500 tons. Value of same about $1,250.

Whole number of persons employed, 5; miner on wages, 1, at $2; 4 outside laborers, $1 66.

This is a small colliery, and the productions are hauled away by teams to town.

PHŒNIX PARK.

Lloyd, Glover & Co., Minersville, Pa.

Value of annual product, $50,000. 200 persons employed—wages not stated.

ST. CLAIR.

Messrs. Barrett & Tucker, for Mrs. Adams Jackson, St. Clair, Pa.

Amount mined, 5,700 tons; value, $11,400.

Whole number of persons employed: from 25 to 30.

Classification.—Nine miners on contract, $11 70 per week; fourteen boys at from $3 to $8 per week; six inside boys at same price.

FORESTERS.

G. King Tyler & Co., Mahanoy City, Pa. P. O. box 255.

Quantity of tons and value in dollars of annual product: 10,097.15 tons; $20,607 88.

Whole number of persons employed, 33.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid to boys.........	Time in operation during year....	REMARKS.
Miners on contract...	*12	......	....	....	....	
Outside laborers.....	7	......	$1 66⅔	....	195 days.	
Inside laborers	5	......	2 16⅔	....	189 "	
Outside mechanic....	1	......	2 16⅔	....	223 "	
Inside mule drivers,	......	1	....	$1 16⅔	189 "	
Slate pickers	......	7	....	Ave. $4 to $5	189 "	

One man on contract, outside, hauling coal by the ton, at 35 cents per ton.

Characteristics of Colliery.—Our colliery is but a small place, with no railroad to it as yet, but hope to have one soon. We only worked nine months in 1875, as it is a new colliery started. The vein that we are working is called the Buck Mountain vein, and is from twelve to fourteen feet, and sometimes more; one small engine, 10-horse power, and one boiler are used.

G. KING TYLER & CO.

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*Average from $2 00 to $2 75 per day.

VAUGHN & JONES.

David Vaughn and John Jones, Ashland, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product: 2,232 tons, at $2 30 per ton—$5,133 60. Exclusive of royalty for land owners.

Whole number of persons employed: 10 on an average.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	1		$1 50		20 dys.	
Miners on wages	3		2 50		865 "	
Inside laborer	1		1 75		45 "	
Outside mechanic	1		$45 pr. mo		1 year.	Engineer and clerk.
Outside mule driver,	1		$1 70		10 dys.	
	1		1 50		55 "	
Inside mule driver	1		1 50		196 "	
Dumper	1	1	1 66	60c.	228 "	Dumping dirt.
Slate pickers		3		75c.	495 "	
Mining overseers	2		2 50		1 year.	
Laborer	1		1 66		46 dys.	
Inside laborer	1		1 75		4½ "	
Blacksmith	1		2 00		17 "	
Carpenter	1		2 50		6 "	

Characteristics of Colliery.—Colliery is mining from the Four Foot and Mammoth veins, and is entirely dependent for its market upon the town consumption. It is located in the borough of Ashland. The improvement is composed of a small breaker, having a capacity of about thirty tons per day. The colliery opening is a drift on the Four Foot vein 200 yards long.

LEVI H. KNABB,
Engineer and clerk for Vaughn & Jones.

TURKEY RUN PRIMROSE.

Jonas Banks & Co., Shenandoah, Schuylkill county, Pa.

Whole number of persons employed: 12.

CLASSIFICATION.	No. of men	No. of boys	Weekly wages pd men	Weekly wages pd boys	Time in operation during year	REMARKS.
Miners on wages	5		$14 00			
Outside laborer	1		10 00			
Outside mechanic	1		14 00			
Outside and inside mule driver		1		$7 00		
Slate pickers		3		3 50		
Watchman	1		9 00			

Characteristics of Colliery.—This colliery is partly a retail colliery, and has been doing considerable retail business during the winter months. We are now shipping by rail. The capacity of this colliery is about ten railroad cars per day, at present. It is quite a new place, and consists of a water level drift on the Primrose vein, South dip, with gangway driven about 100 yards, and still being driven ahead, with three breasts working.

One breaker of about 35 car capacity; 1 nine horse power engine; 2 boilers; 1 mule.

JOSEPH HINKS.

STAFFORDSHIRE COLLIERY.

Jones, Ward & Co., Mahanoy City, P. O. 158, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product: 11,063.06 tons; $27,658 25.

Whole number of persons employed: 43.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	22	......	......	......	....	
Miners on wages....	4	......	$2 10	......	....	
Inside laborers.......	3	......	1 95	......	....	
Outside mechanic....	1	......	2 50	......	....	
Outside mule driver,	......	1	......	$1 00	....	
Inside mule drivers..	......	2	......	1 33¼	....	
Dumpers.............	......	4	......	1 33¼	....	
Slate pickers	......	6	......	83¼	255¼	

We made improvements on our breaker to the amount of $5,000. We had five carpenters working for about three months. The wages paid were as follows: one carpenter, $3 25 per day; one carpenter, $2 50 per day; three carpenters, $2 33 per day each.

JONES, WARD & CO.

SWATARA.

J. C. White, Swatara, Pa.

Employ about 125 persons. Forty-five boys earn, on an average, $5 per week. Men earn, on average, $12 per week. In operation about seven months.

ST. NICHOLAS.

St. Nicholas coal company, St. Nicholas.

Quantity of tons and value in dollars of annual product: 42,837.09 tons Value, $110,120 85 at shipping point, Tamaqua.

Whole number of persons employed: 125.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract ..	40		$3 16		155 days.	
Miners on wages.....	7		2 50		155 "	
Outside laborers.....	33		1 50		155 "	
Inside laborers......	25		1 75		155 "	
Outside mechanics...	9		2 21		275 "	
Inside mechanics....	2		2 50		365 "	
Outside mule drivers	4			$1 14		
Inside mule drivers,	5		1 75		155 "	
Dumpers	1		1 75		155 "	
Slate pickers		60		60	155 "	
Mining overseer.....	1		4 75			
Civil engineers.			2 00			

W. F. DONALDSON, *President.*

KOH-I-NOOR.

Rich'd Heckscher & Co., Shenandoah, Schuylkill county, Pa.

Quantity of tons and value in dollars of annual product: 89,640 tons; $170,316.

Whole number of persons employed: 358.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract ..	140		$3 42		148	Strike against reduction of wages in 1875, lasted from January 1st to June 20th.
Miners on wages.....	6		2 18		165	
Outside laborers.....	45		1 70		160	
Inside laborers......	38		1 82		150	
Outside mechanics...	11		2 50		300	
Inside mechanics....	2		2 40		200	
Outside mule driver	1	2	1 70	$1 33	150	
Inside mule drivers,	8	4	1 80	1 38	150	
Dumpers	2		1 70		150	
Slate pickers.........	25	70	1 25	87	150	
Mining overseers....	2		4 40		300	
Mining engineer.....	1		2 50	p. a.		
Clerk	1		3 00		300	

Characteristics of Colliery.—The shaft is 410 feet deep, opening the Holmes vein, 8 feet thick, and the Mammoth vein 49 feet thick, the latter with a dividing slate about 2 feet thick in the centre. A slope has also been driven to a depth of 470 yards below the shaft level on the Mammoth vein, the basin not having been reached as yet. The aggregate horse power foots up about 600, the inside slope machinery being driven by compressed air, and the water raised by means of permanent tanks, no pumps being used for the purpose. Present capacity, 200,000 tons per annum, the colliery being thoroughly opened and stocked.

RICH'D HECKSCHER & CO.

COLUMBIA COUNTY.

HAZEL DELL.

Robert Gorrell & Co.

Annual product, 20,488 tons, value, $43,043.

Whole number of persons employed: 192—124 men and 68 boys.

Time in operation, 4 months.

Classification of men and wages.—32 miners on contract; 4 miners on wages; 10 outside laborers; 60 inside laborers; 2 outside mechanics; 1 inside mechanic; 2 outside mule drivers; 4 inside mule drivers; 2 dumpers; 68 slate pickers; 2 mining overseers; 3 stationary engineers; 1 bookkeeper; 1 shipper. Average weekly wages paid boys, $4 75. Average weekly wages contractors, $15. Average wages paid day men, $12 per week.

Remarks.—Working the Mammoth and Buck Mountain veins.

CONTINENTAL.

Robert Gorrell, Centralia, Pa.

Mined, 48,791 tons, valued at $91,223 59.

Whole number of persons employed: 257, and are thus classified:

50 miners on contract; 16 miners on wages; 31 outside laborers; 56 inside laborers; 4 outside mechanics; 2 inside mechanics; 3 outside mule drivers; 6 inside mule drivers; 3 dumpers; 73 slate pickers; 2 mining overseers; 4 door boys; 4 stationary engineers; 1 pump man; 1 bookkeeper and 1 shipper. Number of men, 171; boys, 86. Time in operation, 5½ months. Wages paid contractors, $15 per week. Average wages for day men, $12 per week. Average wages for boys, $4 75 per week.

Remarks.—Working the Mammoth vein, and getting ready to sink the Buck Mountain vein.

CENTRALIA COLLIERY.

Dr. G. M. Prevost.

Drowned out October 23, 1874, until March, 1876.

Whole number of persons employed: 200.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract..	30	......	$4 00	......	....	Being drowned out, there was scarcely one month's work during the year.
Miners on wages.....	4	......	2 25	......	....	
Outside laborers.....	70	......	1 67	......	....	
Inside laborers.......	30	......	2 00	......	....	
Outside mechanics..	4	......	2 50	......	....	
Outside mule drivers,	1	1	1 50	......	....	
Inside mule drivers,	......	6	1 75	......	....	
Dumpers............	3	3	2 40	......	....	
Slate pickers........	......	40	......	$ 75	....	
Mining overseers....	4	......	4 00	......	....	
Engine runners.....	4	......	3 00	......	....	

L. S. BALDWIN,
Supt. Centralia Colliery.

CARBON COUNTY.

BUCK MOUNTAIN COLLIERY.

Buck Mountain Coal Company.

Quantity of tons of annual product for the year 1875: 55,616 tons.

Whole number of persons employed: 338.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	106		$2 31		113 days.	
Miners on wages	16		2 16			
Outside laborers	32	1	1 50	$ 67		
Inside laborers	47		1 86			
Mason	1		2 50			
Blacksmiths	5		2 27			
Carpenters	7		2 16			
Outside mule drivers,	3	3	1 65	67		
Inside mule drivers	11	12	1 81	67		
Shipper	1		3 20			
Dumpers—Tip	6		1 60			
Slate pickers	9	22	1 30	41		
Overseers	9		3 23			
Engineers	14	1	2 50	1 00		
Hitchers	11		1 76			
Door tenders		3		44		
Firemen	9	3	2 16	1 00		
Teamsters, &c	6		1 71			

WILLIAM SPENCER,
Supt. Buck Mountain Coal Co.

YORKTOWN COLLIERY.

A. L. Mumper & Co. Audenried, Carbon county.

Quantity of tons and value in dollars of annual product: 72,637$\frac{15}{20}$ tons; $174,801 77.

Whole number of persons employed: 360.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	70				139 d'ys	
Miners on wages	36		$2 25			
Outside laborers	53		1 55			
Inside laborers	50		2 05			
Outside mechanics	24		2 75			
Inside mechanics	20		2 50			
Outside mule drivers	6		1 50			
Inside mule drivers,	10		1 62			
Slate pickers		81		$0 62		
Mining overseers	10		3 40			

Yorktown, Carbon county, situated on the estate of the New York and Lehigh Coal Company, operated by A. L. Mumper & Co., have sunk a new slope on the south dip of the Wharton vein, and are building a new breaker to prepare the coal mined at said slope.

A. L. MUMPER & CO.

MIDDLE LEHIGH.

Middle Lehigh Coal Company, Mauch Chunk.

Quantity of tons and value in dollars of annual product: $77,839\frac{19}{20}$ tons; $181,146 21.

Whole number of persons employed: About 400.

Miners on contract, 75 cents per car; miners on wages, $1 95 per day; outside laborers, $1 50 per day; inside laborers, $1 75 per day; outside mechanics, $2 00 to $2 25 per day; inside mechanics, $2 25 per day; outside mule drivers, $1 50 per day; inside mule drivers, $1 00 to $1 50 per day; dumpers, $1 50 per day; slate pickers, $1 00 per day; mining overseers, $100 per month; civil engineers, $40 per month. Time in operation during year, 6 months.

T. FRANK WALTER, *Prest.*

BEAVER BROOK.

Beaver Brook Coal Company, Audenried, Pa.

Quantity of tons of annual product: 54,000 tons.

Whole number of persons employed: 271.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	60		$3 12		120 days.	
Miners on wages.....	12		2 21		"	
Outside laborers.....	33		1 42		"	
Inside laborers......	70		1 82		"	
Outside mechanics ..	16		2 46		"	
Inside mechanics....	7		2 00		"	
Outside mule drivers		6		$1 12	"	
Inside mule drivers,		20		1 30	"	
Weigh master	1			2 00	"	
Slate pickers		50		50	"	
Mining overseer.....	1				"	$125 per month.
Civil engineer.......	1				"	50 "

E. L. BULLOCK,
Supt. Beaver Brook Coal Co.

DAUPHIN COUNTY.

WILLIAMSTOWN COLLIERY.

Summit Branch R. R. Co., Williamstown, Pa.

Quantity of tons and value in dollars of annual prduct: 305,714.04 tons. Value, (can't say.)

Whole number of persons employed: 678.

CLASSIFICATION.	Number of men,	Number of boys,	Daily wages paid men..........	Daily wages paid men..........	Time in operation during year....	REMARKS.
Miners on contract..	$2 20	......	$3 43	......	....	
Miners on wages.....	51	......	2 17	......	....	
Outside laborers.....	32	......	1 66	......	....	
Inside laborers	98	......	1 83	......	....	
Outside mechanics ..	19	......	2 25	......	....	
Inside mechanics....	16	......	2 50	......	....	
Outside mule drivers,	4	10	2 00	$1 08	....	
Inside mule drivers..	......	49	......	1 33	....	
Dumpers	6	......	1 66	......	....	
Slate pickers.........	......	105	......	67	....	
Mining overseers....	2	......	......	......	....	One at $80 per month. One at $140 per month.
Coal pushers.........	......	39	......	1 00	....	
Door tenders	......	27	......	83	....	

JOS. ANTHONY, *Supt.*

A CONDENSED HISTORY OF WILLIAMSTOWN, PA.

The following extract is taken from the *Miners' Journal* of July 8, 1876:

In an address to the citizens of Williamstown, at their celebration of the Centennial Fourth of July, the Rev. J. F. Wohlfarth, among other remarks, spoke as follows:

"Williamstown, our little village, has come into existence since the commencement of the coal trade. We have in our midst the famous Williamstown colliery, the largest in the United States or the world.

"On the 28th of March, 1866, the first shipment of coal from this place was made to Mr. Baumgardner, consisting of six tons of stove, and the same amount of nut coal.

"The shipments to the close of 1866, amounted in the aggregate to 67,643 tons. The annual shipments after the opening to the close of 1875, were as follows: 1866, 67,634 tons; 1867, 123,109; 1868, 180,304; 1869, 197,971; 1870, 289,082; 1871, 249,053; 1872, 261,485; 1873, 301,326; 1874, 226,223; 1875, 290,878, or a total of 2,187,979 tons.

"There is a double track tunnel of 3,717 feet, or 1,239 yards, driven at an average cost of $130 per yard, or $161,070 for the entire tunnel.

"For every ton of coal shipped away from the place, $1 50 is paid to the men; accordingly, for the 2,187,079 tons of coal shipped since the opening, $3,280,618 50 has been paid to the employees, or an annual average of $328,062, or a monthly average of $27,238.

"There is an average daily shipment of 1,200 tons, and in good times, 'when coal need not be handled with gloves,' there is an average of 1,800 tons daily. The capacity of this colliery for shipments, equals three of the largest and best collieries of Schuylkill county, and the coal is the finest for domestic purposes.

"There are three slopes, the deepest of which is 500 yards below the present tunnel level. There are ten engines and one compressor used, a total of 708 horse power; six pumps and two fans are also in use. The machinery is also of the latest improvement. Eighty-five mules, six horses, two hundred and fifty-one slope and drift wagons, and six trucks are in constant use.

"Three-fifths of all the coal shipped from this region, is shipped from this colliery. There are openings enough made for the next four years, and the prospects for the future, at the present rate of shipments are good for the next twenty years.

"As for the town which depends altogether on this colliery, we have to say, that it has in the last eleven years sprung from apparently nothing to what it is—a town of 2,500 inhabitants. It has seven or more well established dry goods and grocery houses, and all the other business places of an important town. It has nine lodges, seven school rooms, five churches, two excellent bands, and, may I whisper it? too many hotels.

"The moral condition of the place is equal to any town in the coal regions. Our institutions are free, just and beneficent, and our people are intelligent, free and liberal. The future of Williamstown is very bright."

NORTH SIDE.

Edward Miller, Lykens, Pa.

Annual production: 3,300 tons; value $6,600.

Whole number of men employed: 7. Miners on wages, 2, at $2 00 per day; 3 outside laborers at $1 50; 1 inside laborer at $1 50; 1 inside mule driver at $1 50; 1 mining overseer at $2 50. In operation about eight months.

Remarks.—This colliery is situated on the north side of Short mountain, and is accessible only to farmers and others who are able to haul away the coal. No railroad connects with it. Coal only mined for domestic purposes in a farming country.

SHORT MOUNTAIN COLLIERY.

Lykens Valley Coal Company, Wiconisco.

Quantity of tons of annual product: 152,728$\frac{13}{20}$ ton.

Whole number of persons employed: 541 men and boys.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	148	......	$3 58	....	244½ dys.	
Miners on wages....	20	......	2 10	....		
Outside laborers.....	60	......	1 60	....		
Inside laborers......	87	21	1 76	$1 00		
Outside mechanics...	42	.....	2 10	....		
Inside mechanics....	22	......	2 25	....		
Outside mule drivers	5	16	1 75	1 00		
Inside mule drivers,	13	19	1 76	1 16		
Dumpers............	10	......	1 60	....		
Slate pickers.........	5	54	1 43	50		
Mining overseers....	4	......	....	....		
Door boys...........	......	15	....	1 00		

E. C. HANNA, *Supt.*

BIG LICK COLLIERY.

Lykens Valley Coal Co.

Quantity of tons of annual product: 69,263$\frac{15}{20}$ tons.

Whole number of persons employed: 285 men and boys.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid men..........	Time in operation during year...	REMARKS.
Miners on contract ..	48	......	$3 76	......	222¼ days.	
Miners on wages.....	15	.... .	2 10	......		
Outside laborers.....	17	......	1 60	......	......	
Inside laborers......	71	3	1 76	$1 00	......	
Outside mechanics ..	17	......	2 00	......	......	
Inside mechanics....	8	......	2 25	......	......	
Outside mule drivers	4	2	1 60	1 10	......	
Inside mule drivers,	4	13	1 76	1 16	......	
Dumpers	6	......	1 60	......	......	
Slate pickers	4	67	1 50	50	......	
Mining overseers....	3	......	......	......	......	
Door boys............	3	......	......	1 00	......	

E. C. HANNA, *Supt.*

MINERAL RESOURCES OF UPPER DAUPHIN.

The geological features of Upper Dauphin is Devonian, with the exception of a portion of the township of Williams, and the township of Wiconisco, which abound in the lower measures of the Carboniferous system.

Traces of iron ore and mineral paint are found in the Devonian that further explorations may prove to be disintegration from the out-crop of workable strata.

James Fennel, Esq., formerly mine superintendent of Short Mountain and Lykens Valley collieries, in a trial-shaft for coal, proved a bed of *argillaceous* iron ore, four feet in thickness in Bear Valley Swamp ; but no further developments have been made. This bed at the point of discovery is underlayed by a seam of coal, one foot in thickness, which would facilitate the operation of mining. But the ore is of such lean character that it would prove of little value, unless that it also contain flexible properties, advantageous in the reduction of richer ores—which is very probable. However, such is the general characteristics of clay iron ore beds, that they deteriorate in value, and yield a less percentage of iron the deeper they penetrate the ground ; and with the exception of a few localities on the out-croping measures, it may well be mentioned here, that there are no paying beds of iron ore in the anthracite coal measures of Pennsylvania, unless—like the great iron ore bed in the iron district of Cleveland, England, which remained fully exposed for centuries prior to the discovery of its properties—that there are strata in those measures with an appearance so much unlike iron ore as to have escaped notice by the keenest observer. Hence, the anthracite regions are not favored with sufficient facilities to profit by the manufacture of iron from the raw material. It is more economical to carry coal 150 miles to a blast furnace, than it is to supply the same with limestone and ore of average quality, from a distance of 50 miles.

Several furnaces have been erected in the anthracite region, some of which, built for speculative purposes, have met a deserved fate—failure. Suitable localities for blast furnaces depend upon close proximity to market, and the largest quantity of materials used in the manufacture of iron.

Such requisites as far as known are wanting in Upper Dauphin.

The coal territory of Upper Dauphin, is a portion of the First, or Southern Anthracite coal field, consisting of the western extremity of the North Fork, or Lykens Valley Prong. It extends westward from the boundary of Schuylkill county to the western end of Short Mountain ; with an average length of 7½ miles ; average breadth—from outcrop to outcrop of Lykens Valley vein—¾ of a mile ; area, 3,595 acres overlaying Lykens Valley vein.

The Lykens Valley vein is the lowest workable coal seam in the First Anthracite coal field, and the principal vein in the coal measures of Upper

Dauphin. Overlying the Lykens Valley vein are some four or five seams, varying in thickness from three to fifteen feet; with a range on the strike of strata of not more than four miles of workable coal. From a point some four miles west of Schuylkill county boundary to the end of Short Mountain, all the veins overlying the Lykens Valley vein have been proved to be comparatively worthless, or, in other words, not profitable to work. Considerable coal has been taken out from some one or two veins opened in a tunnel driven across the measures at Bear Creek Gap, but not in sufficient quantities, after deducting the cost of mining, to pay for tunnelling, driving through faulty ground, &c. Several efforts have been made to profit by working the veins cut in this tunnel from time, but without success. The last trial, made in 1873 and 1874, terminated in 1875.

Mining operations in Upper Dauphin commenced in 1833; a horse railway was used to convey the coal to Millersburg. In 1848 the Lykens Valley company rebuilt the road, and the first locomotive was put on in 1849. The first shipment of coal from Upper Dauphin, for which there are published records, is given for 1849, 25,225 tons. But of the coal transported over the horse railway prior to 1849, 385,021 tons, none have been recorded in the coal statistics heretofore published. This quantity may be thought to be insignificant as compared with the aggregate tonnage of anthracite, as given in the table; but it is over a thousand times greater than the tonnage recorded for 1820, and exceeds the tonnage of the first decade, from 1820 to 1830, by 25,830 tons. Therefore it is given in the following table:

Coal shipments of Upper Dauphin, via Lykens Valley railroad, from 1833, *to* 1876, *inclusive.*

YEARS.	Lykens Valley & Short Mountain.	Williamstown..	Big Lick........	Aggregate tons..
From 1833 and prior to 1849				385,021
Product of 1849				25,225
From 1850 to 1860	936,740			936,740
From 1860 to 1870	1,647,528	577,074		2,224,602
From 1870 to 1876	691,698	1,870,154	655,165	3,217,017
Total to Nov. 30, 1876	3,301,191	2,447,228	655,165	6,788,605

The first shipments from Williamstown colliery were in 1866, 70,112 tons, and from Big Lick in 1870, 89,619 tons.

To the total shipment by rail must be added 500,000 tons used at the mines in generating steam, in forges, warming buildings, &c., and for local enterprises and domestic purposes; which gives 7,288,605 tons for the total product of Upper Dauphin for a period of 44 years.

To give a correct estimate of the coal contents of Upper Dauphin coal-field is impossible. To give a fair approximate requires an unbiased mind, good judgment, and keen perception sharpened by years of practice. With regard to judgment and perceptive qualities, the writer has no pretention, but he has had years of practice, and will essay the task without bias. In short, he has "no one to love, none to caress," no "watered stock" to flood the channels of fraud.

The surrounding topography and contour of strata visible at Bear Creek Gap, and on the mountain ridges, indicate the vertical depth to the synclinal axis of Lykens Valley vein to be from 2,000 to 3,000 feet, from an imaginal line at an average elevation of both out-crops; and that the declination of the north dipping strata vary, at an angle with the horizon, from 15 to 75 degrees. The lesser angles occurring at or near the out-crop, and increasing as the strata runs downwards, while the north dipping measures are more abrupt at the out-crop, *i. e.*, more "pitched," or in other words, have a greater angle of declination near the surface than the southern out-crop.

It is characteristic of the First Anthracite Coal Field, at least the greatest portion of it, and also of the detached basins of the Lehigh region, that the north dipping strata has suffered more contortion from internal forces than the south dipping measures; while in the Shamokin basin, and the western portion of Lykens Valley Prong, the rule is reversed, the south dipping measures are the most contorted and the less valuable. Therefore, the effects of this contortion must be considered in approximating the contents of this field.

The Lykens Valley vein, when free from fault, as proved by workings on the northern dip, has an average thickness of 9 feet of good coal, with an average density of $1\frac{1}{10}$ tons to the cubic yard, or $3\frac{3}{10}$ tons per square yard of vein. It is divided into two beds, or seams, the dividing state varying from zero to ten feet and over. But the bottom seam only proves workable to a small extent, and it is a common thing when the bottom seam is good, that the top bed is more or less faulty; for that reason it will be considered in the following figures as a portion of the main seam only, and not as a separate bed.

As already mentioned, the basin of Lykens Valley vein has a depth of 2,000 feet for a minimum; hence it is evident that the distance along the course of the vein across the basin must exceed twice that depth. The least possible distance, under these conditions, would give a measurement of 5,640 feet.

Assuming these figures for a basis, we have 7½ miles by 5,640 feet for the area, and 9 feet for the thickness of vein. But one-third of the thickness must be deducted on account of faulty ground, and 45 per cent. for waste in mining, preparing, and loss of pillars left to support the roof, &c., and the result shows a coal area, on Lykens Valley vein, of 5,127.27 acres, or 24,816,000 square yards; and a tonnage of 30,026,700; from which must be deducted 7,200,000 tons for coal mined to November 30th, 1876; and we have 22,826,700 tons of unworked coal on Lykens Valley vein, to which must be added from 5 to 8 million tons for the contents of the overlaying veins, which gives a total of 28 or 30 million of tons for future use.

The casual observer may think the above figures to be very erroneous, when he learns that a coal vein of 9 feet in thickness yields no more than 1.72 tons to the square yard, horizontal measure and only 1.21 tons per square yard of vein. But let him compare these figures with those for the ground already worked and he will find them not to be under estimated. Verily, it will require the best of management and the careful mining of coal, or the above approximation will not be verified.

There are six collieries open and in working condition in Upper Dauphin: Big Run, Mr. James Fennel, proprietor, and North Side, operated by Mr. Edward Miller. Both are landsale collieries, shipping none by rail. The other collieries are known as Short Mountain, Lykens Valley, Big Lick and Summit Branch or Williamstown.

Dependent on these collieries are the towns of Williamstown, Wiconisco, Lykens borough, and some two or three small villages, with a population numbering between seven and eight thousand persons. Eighty per cent. of the dwellings in this once prosperous valley, are the property of working men, the result of hard toil, self denial and privation.

Some of the owners of property are awakening to the fact that future prospects are rather gloomy. Under the present depression of trade, and the low price of coal, there is but one of the large collieries that pay reasonable profits. The others are deep and costly to work, and five or six years hence the present levels will have been worked out, and to sink deeper on the present system, will increase the cost of mining in a geometrical ratio. But let us hope for a change in the course of events, that trade may revive, and that new openings will be made into the bowels of the earth that will pay the owners and enable the workingmen of this valley to earn an honest living.

PHILA. AND READING COAL AND IRON CO.'S COLLIERIES.

GLENDOWER.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $24,322\frac{3}{20}$ tons; $62,259 55.

Whole number of persons employed: 182.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	35	......	$1 65 to 4 14	....	120½ days.	A general labor strike prevented shipments at this colliery until the middle of June.
Miners on wages.....	2	. ....	2 07	....		
Outside laborers.....	21	1	1 25 to 1 80	$1 17		
Inside laborers......	41	8	1 36 to 2 07	0 68 to 0 77		
Outside mechanics...	12	......	1 65 to 2 50	....		
Outside mule drivers	2	10	1 65 1 83	0 83 to 1 17		
Inside mule drivers,	5	......	1 49 1 87	....		
Dumpers	2	......	1 50	....		
Slate pickers.........	3	35	1 25 1 33	0 37 to 1 17		
Mining overseers....	3	......	2 31 to 3 85	....		
Shute bosses.........	2	......	1 50 2 08	....		

KEYSTONE.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $23,647\frac{18}{20}$ tons; $62,049 24.

Whole number of persons employed: 204.

CLASSIFICATION.	No of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	35	......	$1 86 to $5 28	....	128 dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	8	......	2 14	....	....	
Outside laborers.....	27	2	1 25 to 1 83	$1 11	....	
Inside laborers......	37	7	1 95 to 2 23	1 06	....	
Outside mechanics...	9	......	1 73 to 2 33	....	....	
Outside mule drivers	4	3	1 35 to 1 83	79c to 1 12	....	
Inside mule drivers.	8	......	1 45 to 1 96	....	....	
Dumpers	......	2	....	1 12	....	
Slate pickers.........	8	46	1 29 to 1 35	50c to 83c.	....	
Mining overseers	4	......	2 69 to 4 47	....	....	
Shute bosses.........	2	......	1 65 to 1 80	....	....	
Shipper and operator	2	......	1 35 to 1 80	....	....	

NORTH FRANKLIN, No. 2.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 43,500$\frac{4}{20}$ tons; $115,526 87.

Whole number of persons employed: 265.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	104	......	$1 44 to $3 61	....	166¼ dys.	
Miners on wages.....	6	......	2 00	....	....	
Outside laborers.....	25	4	1 35 to 1 58	$1 00 to $1 08	....	
Inside laborers......	36	11	1 70 to 2 00	98 to 1 02	....	
Outside mechanics...	9	......	1 25 to 2 50	....	....	
Outside mule drivers	3	7	1 35 to 2 12	92 to 1 08	....	
Inside mule drivers,	12	4	1 28 to 2 04	92 to 1 10	....	
Dumpers	3	......	1 50 to 1 80	....	....	
Slate pickers........	......	36	....	33 to 92	....	
Mining overseers....	2	......	3 84 & 3 08	....	....	
Shute bosses.........	2	......	1 50	....	....	
Shipper.............	1	......	1 92	....	....	

PINE FOREST.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 26,910 tons; $67,448 38.

Whole number of persons employed: 181.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	47	....	$1 57 to 3 62	....	137 dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	6	....	2 07	....	....	
Outside laborers.....	26	....	1 42 to 1 67	....	....	
Inside laborers	24	8	1 77 to 2 07	81c to 94c	....	
Outside mechanics...	11	....	1 95 to 2 50	....	....	
Outside mule drivers	3	2	1 42 to 1 83	83c	....	
Inside mule drivers,	10	3	1 23 to 2 07	93c to $1 02	....	
Dumper	1	....	1 67	....	....	
Slate pickers........	......	34	....	42c to 67c	....	
Mining overseer.....	5	....	2 31 to 4 33	....	....	
Shute boss...........	1	....	1 50	....	....	

OTTO.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $35,694\frac{3}{20}$ tons; $99,186 65.

Whole number of persons employed: 232.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	70	....	$1 78 to 4 46	....	119¼ dys	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	15	....	2 07 to 2 21	....	....	
Outside laborers.....	24	5	1 35 to 1 95	75c to $1 00	....	
Inside laborers......	35	8	1 43 to 1 94	92c	....	
Outside mechanics ..	11	....	1 92 to 2 33	....	....	
Outside mule drivers	3	7	1 83	75c to 1 17	....	
Inside mule drivers,	1	5	1 77	1 10	....	
Dumpers............	2	....	1 50	....	....	
Slate pickers........	......	40	....	46c to 1 08	....	
Mining overseers....	3	....	2 31 to 4 63	....	....	
Shute bosses.........	2	....	1 50 to 1 65	....	....	
Shipper and tel. opr.,	1	....	1 54	....	....	

OAKDALE.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $31,278\frac{16}{20}$ tons; $77,802 73.

Whole number of persons employed: 209.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	75	....	$1 21 to $4 60	....	118¾ dys.	A general labor strike prevented shipments from this colliery till the middle of June.
Miners on wages.....	7	....	2 07	....	....	
Outside laborers.....	16	3	1 25 to 1 67	$ 67 to $1 08	....	
Inside laborers......	20	9	1 77 to 2 07	77 to 1 19	....	
Outside mechanics...	9	....	2 00 to 3 08	....	....	
Outside mule drivers	....	3	....	83 to 1 08	....	
Inside mule drivers,	5	3	1 87 to 2 07	85 to 1 19	....	
Dumpers............	2	....	1 50	....	....	
Slate pickers.........	4	46	1 33	37 to 1 17	....	
Mining overseers....	3	....	2 81 to 4 00	....	....	
Shute bosses.........	3	....	1 50	....	....	
Shipper..............	1	....	1 58	....	....	

PRESTON No. 2.

Preston Coal and Improvement Company.

Quantity of tons and value in dollars of annual product: 39,568$\frac{13}{20}$ tons; $96,849 82.

Whole number of persons employed: 220.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract..	56	....	$1 67 to 4 16	....	124 days.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages....	5	....	2 07	....		
Outside laborers.....	31	....	1 29 to 1 83	....		
Inside laborers.......	15	9	1 47 to 1 94	$ 85 to 1 02		
Outside mechanics...	9	....	1 50 to 2 50	....		
Outside mule drivers,	4	3	1 83	1 08 to 1 17		
Inside mule drivers,	9	1	1 45 to 1 92	1 23		
Dumpers............	3	....	1 58	....		
Slate pickers.........	14	53	1 29	42 to 1 17		
Mining overseers....	4	....	2 31 to 4 63	....		
Shute bosses.........	3	....	1 50 to 1 67	....		
Shipper and Telegraph operator.....	1	....	1 54	....		

NORTH FRANKLIN No. 1.

Philadelphia and Reading Coal and Iron Company.

Quantity in tons and value in dollars of annual product: 36,812 tons; $101,300 19.

Whole number of persons employed: 151.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	23	....	$2 15 to 5 07	....	208 dys.	
Miners on wages.....	15	....	2 00	....	....	
Outside laborers.....	22	....	1 35 to 1 96	....	....	
Inside laborers.......	21	4	1 70 to 1 87	94c to $1 14	....	
Outside mechanics...	7	....	1 50 to 2 33	....	....	
Outside mule drivers	4	4	1 35 to 2 12	1 00	....	
Inside mule drivers,	5	....	1 70 to 2 00	....	....	
Dumpers............	2	....	1 50	....	....	
Slate pickers...............		40	....	46c to 1 08	....	
Mining overseers....	2	....	3 56 to 3 85	....	....	
Shute boss...........	1	....	1 50	....	....	
Shipper & telegraph operator...........	1	....	1 73	....	....	

PHOENIX PARK No. 2.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product : 27,060$\frac{15}{20}$ tons ; $74,676 21.

Whole number of persons employed : 144.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract...	47	....	$1 61 to 3 78	....	113$\frac{3}{4}$ dys	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	4	....	1 99	....	....	
Outside laborers.....	11	3	1 50 to 1 83	75c to $1 10	....	
Inside laborers......	22	10	1 53 to 1 84	81c to 1 15	....	
Outside mechanics...	7	....	1 65 to 3 00	....	....	
Outside mule drivers	2	2	1 50 to 1 57	75c to 83c	....	
Inside mule drivers,	3	....	1 10 to 1 84	....	....	
Dumpers	2	....	2 00	....	....	
Slate pickers........	......	25	....	33c to 79c	....	
Mining overseers....	4	....	2 31 to 3 85	....	....	
Shute boss...........	1	....	1 65	....	....	
Telegraph operator..	1	....	1 23	....	....	

MINE HILL GAP.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product : 53,929$\frac{14}{20}$ tons ; $137,220 54.

Whole number of persons employed : 333.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year ...	REMARKS.
Miners on contract ..	110	....	$1 97 to $5 33	....	135$\frac{3}{4}$ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages	14	....	2 07	....	....	
Outside laborers.....	41	1	1 21 to 1 67	$1 00	....	
Inside laborers......	46	30	1 77 to 2 07	$ 85 to 1 14	....	
Outside mechanics ..	11	....	1 95 to 2 60	....	....	
Outside mule driver,	1	....	1 67	....	....	
Inside mule drivers,	5	14	1 53 to 2 07	1 14	....	
Dumpers	2	....	1 50	....	....	
Slate pickers	2	49	1 21 to 1 50	36c to 83c	....	
Mining overseers....	5	....	2 69 to 4 33	....	....	
Shute boss...........	1	....	1 80	....	....	
Telegraph operator..	1	....	1 25	....	....	

MERRIAM.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 86,620$\frac{13}{20}$ tons; $228,442 01.

Whole number of persons employed: 348.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	105	....	$2 07 to 4 54	....	134½ days.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages	12	....	2 07	....		
Outside laborers.....	45	1	1 21 to 1 83	$ 96		
Inside laborers.......	84	9	1 77 to 2 12	85 to 1 02		
Outside mechanics ..	11	....	1 73 to 2 50	....		
Outside mule drivers,	3	2	1 66 to 1 83	1 12		
Inside mule drivers..	14	2	1 40 to 1 87	1 00		
Slate pickers.........	8	44	1 21	46 to 1 08		
Mining overseers....	3	....	4 08 to 2 31	....		
Shute bosses....	3	....	1 50 to 1 80	....		
Shipper and operator,	1	1	1 80	1 15		

FORESTVILLE.

Philadelphia and Reading Coal and Iron company.

Quantity of tons and value in dollars of annual product: 33,737$\frac{11}{20}$ tons; $87,628 71.

Whole number of persons employed: 189.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	60	....	1 80 to 1 65	....	130½ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	2	....	1 20 to 1 95	....	....	
Outside laborers.....	15	3	1 44 to 1 65	83c to $1 00	....	
Inside laborers	27	16	1 65 to 2 84	68c to 1 02	....	
Outside mechanics...	8	....	1 95 to 2 33	....	....	
Outside mule drivers	2	3	2 10	83c to 90c	....	
Inside mule drivers,	2	3	1 50 to 1 00	$1 07	....	
Dumpers.............	2	....	1 80	....	....	
Slate pickers.........	2	38	2 25 to 3 50	37c to $1 00	....	
Mining overseers....	4	....	1 85	....	....	
Shute bosses.........	1	....	 80	....	....	
Telegraph operator..	......	1	....	83c	....	

MIDDLE CREEK SHAFT.

Tremont Coal Company.

Quantity of tons and value in dollars of annual product: 9,025$\frac{2}{20}$ tons; $25,224 64.

Whole number of persons employed: 195.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	45	....	$1 49 to 3 45	....	66½ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	19	....	2 07 to 2 17	....	....	
Outside laborers.....	30	6	1 33 to 1 67	67c to $1 17	....	
Inside laborers......	32	5	1 70 to 1 99	77c to 1 19	....	
Outside mechanics...	9	....	1 73 to 2 33	....	....	
Outside mule drivers	2	3	1 83	67c to 83c	....	
Inside mule driver,	1	3	1 87	1 00 to 1 17	....	
Dumpers	2	....	1 50	....	....	
Slate pickers.........	2	31	1 33 to 1 50	33c to 1 00	....	
Mining overseers....	3	....	2 31 to 4 63	....	....	
Shute boss..........	1	....	1 50	....	....	
Shipper	1	....	1 50	....	....	

BUCKVILLE.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 16,812.02 tons; $40,431 95.

Whole number of persons employed: men, 125; boys, 52; total, 177.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	37	....	$1 76 to 5 76	....	112¼ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	16	....	2 07	....	....	
Outside laborers.....	19	2	1 33 to 1 67	$1 17	....	
Inside laborers......	31	5	1 77 to 2 07	77 to 85	....	
Outside mechanics ..	11	....	1 38 to 2 50	....	....	
Outside mule drivers,	2	4	1 21 to 1 83	67 to 1 17	....	
Inside mule drivers..	2	6	1 77	77 to 1 14	....	
Dumper	1	....	1 50	....	....	
Slate pickers	......	35	....	50 to 1 00	....	
Mining overseers....	4	....	2 31 to 4 48	....	....	
Shute boss..	1	....	1 50	....	....	
Shipper & telegraph operator...........	1	....	1 50	....	....	

POTTS.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 40,910 12/20 tons; $107,860 12.

Whole number of persons employed: 260.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men............	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	43	....	$2 54 to $4 86	....	121½ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	6	....	2 14	....	....	
Outside laborers.....	40	1	1 21 to 1 83	75c	....	
Inside laborers.	52	11	1 87 to 2 27	98c	....	
Outside mechanics..	11	....	1 35 to 2 50	....	....	
Outside mule drivers	3	2	1 25 to 1 83	50c to 83c	....	
Inside mule drivers,	5	7	1 84 to 2 04	$1 14 to 1 23	....	
Dumper	1	....	1 50	....	....	
Slate pickers	5	66	1 21 to 1 35	33c to $1 08	....	
Mining overseer.....	4	....	2 69 to 4 50	....	....	
Shute bosses.........	2	....	1 80	....	....	
Shipper & telegraph operator...........	1	1	1 80	....	....	

BEECHWOOD.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 44,768 18/20 tons; $111,320 00.

Whole number of persons employed: 332.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid paid	Daily wages paid boys......... ..	Time in operation during year....	REMARKS.
Miners on contract ..	116	....	$1 54 to $4 92	....	126 dys.	*A general strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	11	....	2 07	....		
Outside laborers.....	23	4	1 33 to 1 96	$ 58 to $ 83		
Inside laborers......	55	23	1 77 to 1 92	85 to 1 19		
Outside mechanics ..	9	....	1 79 to 2 50	....		
Outside mule drivers	2	5	1 33 to 1 83	75 to 1 00		
Inside mule drivers,	5	12	1 32 to 2 07	1 10 to 1 14		
Dumpers	2	1	1 50	75		
Slate picker.........	1	55	1 33	46 to 83		
Mining overseers....	6	....	2 69 to 4 33	....		
Shute boss...........	1	....	1 67	....		
Telegraph operator..	1	....	1 67	....		

THOMASTON.

Philadelphia and Reading Coal and Iron Company.

Quantity in tons of value in dollars of annual product: 41,104$\frac{8}{20}$ tons; $106,944 80.

Whole number of persons employed: 276.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys......	Time in operation during year....	REMARKS.
Miners on contract...	81	....	$1 68 to $6 04	....	128$\frac{3}{4}$ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	18	....	2 07	....	....	
Outside laborers.....	25	3	1 37 to 1 80	92c to $1 00	....	
Inside laborer.......	37	15	1 77 to 2 07	77c to 85c	....	
Outside mechanic....	11	....	1 50 to 2 50	....	....	
Outside mule drivers	6	4	1 37 to 1 50	54c to $1 17	....	
Inside mule drivers,	7	2	1 28 to 1 77	69c to 1 02	....	
Dumpers	1	1	1 50	1 17	....	
Slate pickers	11	47	1 21 to 1 42	46c to 1 17	....	
Mining overseers....	4	....	2 31 to 3 85	....	....	
Shute bosses.........	3	....	1 50 to 1 58	....	....	
Shipper.............	1	....	1 67	....	....	

PLANK RIDGE.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 81,737$\frac{3}{20}$ tons; $207,467 47.

Whole number of persons employed: 420.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	82	....	$1 84 to 5 31	....	132 dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	23	....	1 92 to 2 32	....	....	
Outside laborers.....	48	1	1 25 to 1 67	87c	....	
Inside laborers......	102	10	1 68 to 2 14	77c to 85c	....	
Outside mechanics...	12	....	1 67 to 2 33	....	....	
Outside mule drivers	1	6	1 83	87c to 1 12	....	
Inside mule drivers,	22	1	1 28 to 1 87	1 19	....	
Dumpers	3	....	1 35 to 1 67	....	....	
Slate pickers	......	103	....	33c to 1 17	....	
Mining overseers....	3	....	2 78 to 3 46	....	....	
Shute bosses.........	2	....	1 50 to 1 58	....	....	
Shipper and tel. opr..	1	....	1 73	....	....	

It consists of a double cage-way shaft, sunk to the E vein. The coal of this level is nearly exhausted, but a slope is sunk on the north dip of the vein 200 yards east, and sufficiently deep to allow it to be worked in three lifts, and touching an anticlinal axis in its lower east gangway. On its west the vein is open by a slope, 280 yards deep, and to the bottom of the basin, which is connected with the workings of the Indian Ridge colliery, from whose shaft workings the largest portion of this coal is hoisted out. Ventilation is not adequate to keep so large a mine in good working order. There is a large amount of powder used daily. The air-currents are moved only by natural means, so it is impossible to get adequate ventilation established. Nine engines=390-horse power, with 17 boilers, are in use.

ELLANGOWAN.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $63,984\frac{14}{20}$ tons. $139,755 53.

Whole number of persons employed: 303.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract ..	96	....	$1 35 to 5 44	....	130½ dys	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	9	....	2 07	....	....	
Outside laborers.....	37	....	1 50 to 1 95	....	....	
Inside laborers......	53	6	1 77 to 2 07	$ 85	....	
Outside mechanics...	7	....	2 31 to 2 33	....	....	
Outside mule drivers,	5	9	1 67 to 1 83	88 to 1 17	....	
Inside mule drivers.	6	....	1 77	....	....	
Dumpers	1	....	1 70	....	....	
Slate pickers........	......	68	....	37 to 1 17	....	
Mining overseers ...	2	....	3 08 to 3 46	....	....	
Shute bosses.........	3	....	1 50 to 1 71	....	....	
Shipper and operator,	1	....	1 54	....	....	

* It consists of water level openings, in which the Mammoth, Orchard and Primrose veins are extensively worked above water level, while the new shaft will open the same veins on their lower lifts, which will constitute this colliery one of the best producing collieries in the county. Ventilation is effected by a forty-horse power fan, supplying an adequate amount of air. Three engines, of seventy-horse power, with sixboilers are in use.

LOCUST SPRING.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $31,863\frac{8}{20}$ tons; $84,329 32.

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* From report of mine inspector.

Whole number of persons employed: 203.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract..	36	....	$1 80 to $4 69		129½ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages....	3	....	2 07			
Outside laborers.....	23	....	1 33 to 1 67			
Inside laborers......	36	2	1 77 to 2 16	$ 94		
Outside mechanics...	6	....	1 73 to 2 50			
Outside mule drivers	2	5	1 83	1 17		
Inside mule drivers,	5	....	1 61 to 2 07			
Dumpers..........	2	....	1 33 to 1 50			
Slate pickers.........		58		$ 42 to 1 17		
Mining overseers....	2	....	3 54 to 4 31			
Shute bosses.........	2	....	1 80			
Shipper..............		1		1 00		

The colliery is situated at Locust Gap, in Northumberland county. A slope 400 yards deep opens the E vein on its south dip. No. 2 breast is used as a self acting plane for working the upper part of the lower lift; a 20-horse power fan is used, which supplies a sufficient amount of air for the colliery; 16 breasts are working, and the general condition of the colliery is good; 170-horse power engines, with 11 boilers, are used, and a pole pump has been used for draining.

TUNNELL.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 50,054 tons; $130,283 72.

Whole number of persons employed: 264.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract..	27	....	$2 04 to $5 24		139¼ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	30	....	2 14 t0 2 38			
Outside laborers.....	30	1	1 33 to 1 83	$1 08		
Inside laborers......	60	13	1 87 to 2 28	94c to 1 19		
Outside mechanics..	13	....	1 80 to 2 50			
Inside mechanic.....	1	....	1 29			
Outside mule drivers	6	1	1 33 to 1 83	67c		
Inside mule drivers,	10	4	1 33 to 2 04	$1 02 to 1 10		
Dumper..............	1	....	1 50			
Slate pickers.......	6	53	1 21 to 1 33	50c to 1 04		
Mining overseers....	4	....	2 69 to 4 63			
Shute bosses.........	3	....	1 50 to 1 80			
Shipper & telegraph operator...........	1	....	1 54			

MT. CARMEL SHAFT.

Philadelphia and Reading Coal and Iron Company.

Quantity in tons and value in dollars of annual product: 21,076$\frac{29}{23}$ tons; $59,574 20.

Whole number of persons employed: 222.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	40		$1 43 to $4 47		125 dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	7		2 07 to 2 38			
Outside laborers.....	21	5	1 50 to 1 75	$1 to $1 17		
Inside laborers......	64	8	1 36 to 1 94	77c to 1 19		
Outside mechanics ..	9		1 73 to 2 50			
Outside mule drivers	4		1 50 to 1 73			
Inside mule drivers,	9	1	1 28 to 1 77	1 19		
Dumper.............	1		1 50			
Slate pickers.........	1	45	1 25	42c to 83c		
Mining overseers....	3		2 31 to 4 31			
Shute bosses.........	3		1 67			
Shipper..............	1		1 80			

WEST BROOKSIDE.

Philadelphia and Reading Coal and Iron Company.

Quantity in tons and value in dollars of annual product: 68,53.02 tons, $220,992 77.

Whole number of persons employed: 325.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract ..	100		$1 09 to 4 78		138¾ dys	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages	11		2 07 to 2 47			
Outside laborers.....	27	1	1 33 to 1 67	$ 75		
Inside laborers......	88	6	1 53 to 2 07	77		
Outside mechanics ..	7	1	2 17 to 2 33	1 17		
Inside mechanics....	2		1 92 to 2 31			
Outside mule drivers	4	2	1 25 to 1 83	83		
Inside mule drivers,	10	13	1 24 to 1 94	94 to 1 15		
Dumpers...........	2		1 58			
Slate pickers........	6	39	1 33	42 to 96		
Mining overseers....	3		2 69 to 3 46			
Shute bosses.........	2		1 50			
Shipper and operator,	1		1 92			

EAGLE HILL SHAFT.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $26,953\frac{5}{20}$ tons $70,378 36.

Whole number of persons employed: 180.

CLASSIFICATION.	No. of men	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract ..	50	....	$1 93 to $6 62	....	135 dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	5	....	2 07 to 2 38	....	....	
Outside laborer......	19	5	1 39 to 1 67	$ 67 to $1 08	....	
Inside laborers......	37	9	1 53 to 1 94	77 to 94	....	
Outside mechanics ..	11	....	1 50 to 2 50	....	....	
Outside mule driver,	1	....	1 73	....	....	
Inside mule drivers,	....	5	....	94 to 1 10	....	
Dumper	1	....	1 25	....	....	
Slate picker	1	30	1 33	46 to 1 00	....	
Mining overseers....	4	....	2 31 to 4 00	....	....	
Shute boss..........	1	....	1 67	....	....	
Shipper & telegraph operator...........	1	....	1 25	....	....	

BAST.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $72,121\frac{16}{20}$ tons; $185,243 03.

Whole number of persons employed: 269.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	51	...	$2 28 to $4 65	....	147 dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	21	....	2 14 to 2 30	....	....	
Outside laborers.....	36	....	1 21 to 1 95	....	....	
Inside laborers......	52	12	1 28 to 2 23	92c to $1 00	....	
Outside mechanics ..	11	1	1 95 to 2 50	1 00	....	
Outside mule drivers,	6	....	1 21 to 1 83	....	....	
Inside mule drivers,	12	....	1 36 to 1 96	....	....	
Dumpers	4	....	1 50	....	....	
Slate pickers.........	5	50	1 33	46c to $1 08	....	
Mining overseers....	4	....	2 69 to 4 56	....	....	
Shute bosses.........	3	....	1 65 to 1 80	....	....	
Shipper & telegraph operator..........	1	....	1 54	....	....	

RICHARDSON.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 4,906$\frac{15}{20}$ tons. $13,511 57.

Whole number of persons employed: 134.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract ..	40	....	$1 86 to 4 18	....	59½ dys	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	10	....	2 07	....	....	
Outside laborers.....	20	....	1 50 to 1 67	....	....	
Inside laborer........	20	9	1 77 to 2 07	$ 85	....	
Outside mechanics ..	7	....	1 75 to 2 50	....	....	
Outside mule drivers,	1	1	1 83	1 04	....	
Inside mule drivers,	2	3	1 77	1 10 to 1 19	....	
Slate pickers	......	16	....	37 to 1 17	....	
Mining overseers....	3	....	2 31 to 4 08	....	....	
Shute boss...........	1	....	1 50	....	....	
Shipper & telegraph operator............	1	....	2 27	....	....	

EAST FRANKLIN.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 26,340 tons; $72,603 29.

Whole number of persons employed: 163.

CLASSIFICATION.	No. of men......	No. of boys	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract ..	45	....	$1 29 to $4 59	....	130¼ dys.	A general labor strike prevented shipments at this colliery till beginning of June.
Miners on wages.....	7	....	2 07	....	....	
Outside laborers.....	19	....	1 21 to 1 83	....	....	
Inside laborers	30	16	1 77 to 2 01	$ 68 to $1 02	....	
Outside mechanics...	9	....	1 33 to 2 69	....	....	
Outside mule drivers	2	5	1 67 to 1 83	50 to 83	....	
Inside mule drivers,	3	4	1 77 to 1 86	85 to 1 19	....	
Slate pickers	1	18	1 33	33 to 67	....	
Mining overseers....	3	....	2 31 to 4 00	....	....	
Shute boss..........	1	....	1 65	....	....	

MAHANOY CITY.

Philadelphia and Reading Coal and Iron Company.

Quantity in tons and value in dollars of annual product: $51,400\frac{18}{20}$ tons; $132,599 29.

Whole number of persons employed: 213.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract...	46	....	$1 55 to $4 28	....	$140\frac{1}{4}$ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	8	....	1 99 to 2 16	....	....	
Outside laborers.....	25	1	1 33 to 1 75	$1 00	....	
Inside laborers......	44	8	1 77 to 2 46	85c to 1 10	....	
Outside mechanics...	9	....	1 83 to 2 50	....	....	
Outside mule drivers	3	2	1 80 to 1 83	1 17	....	
Inside mule drivers,	8	....	1 31 to 1 82	....	....	
Dumpers	2	....	1 50	....	....	
Slate pickers.........	17	35	1 29 to 1 33	33c to 1 08	....	
Mining overseers....	2	....	3 21 to 4 04	....	....	
Shute bosses.........	2	....	1 80 to 2 10	....	....	
Shipper..............	1	....	2 08	....	....	

The E vein is open by a slope 110 yards deep in 18 feet of coal, and the lift is worked by a counter lift in connection with the main one. The Primrose vein is opened by a tunnel in 16 feet of coal. A new lift is to be sunk shortly which will re-open these veins, but on a larger scale for supply. Compressed air will be used as a moter for these engines. Ventilation is produced by 2 fans, a 10-horse power and a 20-horse power, which supplies an adequate amount of air for all purposes. Eight engines of 530-horse power, with 18 good boilers in use.

HELFENSTEIN.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $15,974\frac{11}{20}$ tons; $40,977 75.

Whole number of persons employed: 94.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	26	....	$1 56 to 4 27	....	$122\frac{3}{4}$ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	2	....	2 07	....	....	
Outside laborers.....	13	....	1 50 to 1 83	....	....	
Inside laborers......	17	1	1 77 to 1 87	$ 85	....	
Outside mechanics...	5	....	1 54 to 2 50	....	....	
Outside mule drivers,	3	....	1 33 to 1 83	....	....	
Inside mule drivers,	1	....	1 42	....	....	
Dumpers............	2	....	1 50	....	....	
Slate pickers	....	20	....	42 to 1 17	....	
Mining overseers....	2	....	3 27 to 4 04	....	....	
Shute bosses.........	1	....	1 65	....	....	
Shipper & telegraph operator...........	1	....	1 50	....	....	

It consists of a tunnel and slope opening, the tunnel is now idle. The slope is sunk inside, opening the Lykens Valley vein in 12 feet of coal with eight breasts open ; nothing is done at present on its east panel, nothing of importance had been done during the year. The power is 165-horse, with five boilers. The colliery is well ventilated by a twenty-horse power fan. 15,974 tons of coal have been mined since resumption took place.

INDIAN RIDGE.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $98,569\frac{2}{20}$ tons ; $257,125 47.

Whole number of persons employed : 384.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	80	....	$1 71 to $5 60	....	144 dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	11	....	2 07	....	....	
Outside laborers.....	35	....	1 50 to 1 83	....	....	
Inside laborers......	114	13	1 77 to 2 07	$ 85	....	
Outside mechanics ..	13	....	1 50 to 2 33	....	....	
Outside mule drivers	2	8	1 83	$ 92 to 1 17	....	
Inside mule drivers,	22	3	1 23 to 1 96	94 to 1 10	....	
Dumpers............	2	....	1 50 to 1 67	....	....	
Slate pickers	....	74	....	42 to 1 17	....	
Mining overseers....	4	....	2 16 to 3 46	....	....	
Shute bosses.........	2	....	1 58	....	....	
Shipper & telegraph operator...........	1	....	1 73	....	....	

It consists of a shaft sunk on the E vein in its first basin, and has been extensively mined this last six years. The upper coal is worked by counter levels, the coal lowered on planes to the foot of the shaft, and thence hoisted out. All the underlying veins in this colliery, as well as all in the Shenandoah collieries, are not yet worked, and consequently very large fields of coal are yet untouched in this locality after the E vein coal may have been exhausted. Ventilation is produced by a 40-horse power steam fan, which supplies an abundance of air for all purposes. The general condition of the colliery and all its appointments are good; 72 breasts are working on 3 gangways; 9 engines, of 658-horse power, with 18 good boilers are in use.

KNICKERBOCKER.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $64,593\frac{5}{20}$ tons; $164,597 87.

Whole number of persons employed: 309.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men............	Daily wages paid boys............	Time in operation during year....	REMARKS.
Miners on contract...	77	....	$1 51 to $6 15	....	134 dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	10	....	2 07	....	....	
Outside laborers.....	30	2	1 33 to 1 95	$1 04 to $1 17	....	
Inside laborers......	58	5	1 77 to 1 99	85	....	
Outside mechanics ..	8	....	2 00 to 2 33	....	....	
Outside mule drivers	7	1	1 21 to 1 83	92	....	
Inside mule drivers,	9	1	1 30 to 1 77	34	....	
Dumpers	3	....	1 37	....	....	
Slate pickers	....	92	....	46 to 1 17	....	
Mining overseers....	2	....	3 42 to 4 10	....	....	
Shute bosses.........	3	....	1 58 to 1 67	....	....	
Shipper & telegraph operator...........	1	....	1 54	....	....	

It consists of a slope and drift opening on the G or Primrose vein, a tunnel opens the north dip of the vein; on the western end of the basin an incline plane opens into a flat body of coal, another tunnel opens the south dip of the seam, and another tunnel opens the bottom split of the E vein in 14 feet of coal. The general condition of the colliery is very promising. Two steam fans produce ventilation, which is quite satisfactory. No smoke or standing gases are met with in the mine. Six engines of 185-horse power, with 11 boilers are in use.

WEST SHENANDOAH.

Philadelphia and Reading Coal and Iron Company.

Quantity in tons and value in dollars of annual product: $30,078\frac{19}{20}$ tons; $69,584 83.

Whole number of persons employed: 212.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	37	....	$1 49 to $5 99	....	140½ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	9	....	2 07	....	....	
Outside laborers.....	15	9	1 50 to 1 67	67c to $1 17	....	
Inside laborer........	55	3	1 28 to 2 17	85	....	
Outside mechanics..	7	....	1 33 to 2 33	....	....	
Inside mechanic.....	1	....	2 31	....	....	
Outside mule driver,	1	3	1 83	1 04	....	
Inside mule drivers,	13	....	1 28 to 2 07	....	....	
Dumper..............	1	1	1 50	92	....	
Slate pickers....	......	51	....	42c to 1 17	....	
Mining overseers....	2	....	3 08 to 3 84	....	....	
Shute bosses.........	3	....	1 58	....	....	
Shipper & telegraph operator	1	....	1 54	....	....	

It consists of a slope opening the B vein in two lifts. The old lift is extensively worked. The shaft opens a large body of flat-laying coal east of the slope workings, and all prepared at the breaker. At present the mines are ventilated by furnaces, but a 20-horse power fan is nearly ready to be put into operation for a better system of ventilation. There are 3 engines =100-horse power, with 8 good boilers in use.

ELLANGOWAN SHAFT.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: None.

Whole number of persons employed: 106.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	60	....	$1 50 to 5 08	......	134 days.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	3	....	2 07	......	....	
Outside laborers.....	8	....	1 50 to 1 67	......	....	
Inside laborers......	20	2	1 77 to 2 12	$0 85	....	
Outside mechanics...	5	....	1 80 to 2 33	......	....	
Outside mule drivers	4	....	1 21 to 1 83	......	....	
Inside mule drivers,	2	1	1 77	0 34	....	
Mining overseer.....	1	....	4 04	......	....	

Situated at Mapledale, midway between Mahanoy and Shenandoah cities. It consists of a shaft sunk 111 yards deep to the middle split of the E vein. The E vein is here found in three prongs, namely: The bottom prong is 12 feet thick, the middle prong is 11 feet, and the upper prong is 10 feet thick, with 194 yards of breast runs, which will bear to be divided into two lifts each and are worked by counter-workings, which when opened for full mining will give 12 gangways. West of the shaft a tunnel opens the Primrose or G vein, which when opened will again afford 4 more gangways, and which will allow of counter-workings 2 lifts, making 8 gangways of 95 yards of a lift; the colliery will afford 20 gangways, with $2\frac{1}{2}$ mile run to each. The colliery, when under a full and fair working order, will be able to produce 1,500 tons of coal per day. The coal mined here at present is manufactured at the Knickerbocker breaker. Thirteen breasts are working; a 40-horse power fan is used for ventilation, which affords an ample supply for present purposes. Two engines, of 40-horse power each, with 6 boilers, and 2,600 yards of track are in use.

NORTH MAHANOY.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $40,063\frac{9}{20}$ tons; $100,215 50.

Whole number of persons employed: 174.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	52	....	$1 14 to $3 52	....	148 dys.	A general labor strike prevented shipments at this colliery till the beginning of June.
Miners on wages.....	3	....	1 99 to 2 04	....	....	
Outside laborers.....	17	1	1 50 to 2 00	$ 79	....	
Inside laborers......	31	4	1 53 to 2 34	59	....	
Outside mechanics ..	7	....	1 83 to 2 33	....	....	
Inside mechanic.....	1	....	2 50	....	....	
Outside mule driver,	1	2	1 83	1 05	....	
Inside mule drivers,	8	1	1 36 to 1 80	94	....	
Dumper..............	1	....	1 67	....	....	
Slate pickers.........	9	33	1 33	$ 42 to 79	....	
Mining overseers....	2	....	3 08 to 4 48	....	....	
Shute boss...........	1	....	1 95	....	....	

It consists of a slope opening on the E vein. Thirteen breasts are open. There are 2 veins worked by this slope. The ventilation is produced by 2 fans. A tunnel opens the D vein on its south dip. The ventilation is produced by 2 steam fans. Five engines of 160-horse power, with 10 boilers, are used.

BOSTON RUN.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $39,084\frac{3}{20}$ tons; $103,516 47.

Whole number of persons employed: 192.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid men..........	Time in operation during year....	REMARKS.
Miners on contract...	55	....	$1 95 to $4 06	....	150½ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	3	....	2 07	....	....	
Outside laborers.....	27	....	1 50 to 1 95	....	....	
Inside laborers......	25	3	1 68 to 2 27	$1 06 to $1 19	....	
Outside mechanics ..	6	1	1 50 to 2 33	1 05	....	
Inside mechanic.....	1	...	2 50	....	....	
Outside mule drivers,	6	3	1 33 to 1 83	90c to 1 05	....	
Inside mule drivers,	7	....	1 53 to 1 76	....	....	
Slate pickers.........	7	43	1 29 to 1 33	37c to 1 17	....	
Mining overseer.....	2	....	3 23 to 4 00	....	....	
Shute bosses.........	2	...	1 58	....	....	
Shipper & telegraph operator...........	1	....	1 38	....	....	

This colliery consists of a slope opening on the E vein. There are 4 coal seams opening, making 34 feet in thickness. Good safety roads are opened on the D seam. Eight engines of 205-horse power, with 12 boilers; 500 yards of tracks are in use; the condition of the mine is fair.

ELMWOOD.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $25,738\frac{3}{20}$ tons; $64,762 73.

Whole number of persons employed: 162.

CLASSIFICATION.	No. of men......	No. of boys	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	45	....	$1 20 to 4 07	....	140½ dys	A general labor strike prevented shipments at this colliery till the beginning of June.
Miners on wages.....	3	....	2 07 to 2 21	....	....	
Outside laborers.....	15	2	1 33 to 1 67	$1 17	....	
Inside laborers	36	5	1 77 to 2 07	0 81	....	
Outside mechanics ..	5	1	1 80 to 2 33	0 83	....	
Inside mechanic......	1	....	2 50	....	....	
Outside mule drivers	2	1	1 37 to 1 83	1 08	....	
Inside mule drivers,	5	3	1 28	98c to 1 10	....	
Dumper	1	....	1 50	....	....	
Slate pickers.........	......	33	....	42c to 1 17	....	
Mining overseers....	2	....	3 27 to 3 85	....	....	
Shute bosses.........	2	....	1 50 to 1 83	....	....	

It consists of a slope sunk on the south dip of the E vein. Nineteen breasts are open in 14 feet of good coal; a 20-horse power fan produces ventilation; 5 engines of 356-horse power are used, with 10 good boilers; 9 mules, 24 wagons; 414 yards of track are in use.

PRESTON 3 AND 4.

Preston Coal and Improvement Company.

Quantity of tons and value in dollars of annual product: $16,536\frac{14}{20}$ tons; $42,656 69.

Whole number of persons employed: 149.

CLASSIFICATION.	No. of men......	No. of boys.....	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	24	....	$1 66 to $5 32	....	$129\frac{3}{4}$ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	13	....	2 07 to 2 21	....	....	
Outside laborers.....	17	2	1 33 to 1 83	$1 17	....	
Inside laborer.......	28	7	1 53 to 2 16	85	....	
Outside mechanics...	6	....	1 95 to 2 50	....	....	
Outside mule drivers	1	3	1 83	$1 08 to 1 17	....	
Inside mule drivers,	4	....	1 45 to 2 04	....	....	
Dumpers	......	3	....	1 17	....	
Slate pickers.........	12	23	1 25 to 1 50	50c to 1 00	....	
Mining overseer.....	3	....	2 31 to 4 63	....	....	
Shute bosses.........	2	....	1 50 to 1 65	....	....	
Shipper & telegraph operator............	1	....	1 54	....	....	

It consists of 2 slopes, one for coal and the other for drainage, men and material. The E vein is mined extensively here, and ventilation is considered fair; the condition of all its appointments is very good. Five engines of 596-horse power, with 17 boilers, are used; 4 mules and 45 wagons with one 50-horse power fan.

ANCHOR.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: 19,664.05 tons; $52,117 95.

Whole number of persons employed: 203.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year...	REMARKS.
Miners on contract ..	60	....	$1 77 to $3 83	....	119¾ dys.	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages	16	1	1 99 to 2 07	$ 85	....	
Outside laborers.....	17	4	1 50 to 1 83	$ 90 to 1 08	....	
Inside laborers......	40	7	1 77 to 2 07	85	....	
Outside mechanics ..	12	....	1 20 to 2 50	....	....	
Outside mule drivers	1	3	1 83	90 to 1 17	....	
Inside mule drivers,	3	1	1 28 to 1 87	1 19	....	
Dumpers	2	....	1 50	....	....	
Slate pickers	2	28	1 20	50 to 1 00	....	
Mining overseers....	4	....	2 31 to 3 85	....	....	
Shute bosses..... ...	2	....	1 65	....	....	

PRESTON NO. 1.

Preston Coal and Improvement Company.

Quantity of tons and value in dollars of annual product: 8,219$\frac{12}{20}$ tons; $21,455 11.

Whole number of persons employed: 112.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract ..	35	....	$1 41 to 4 85	....	125¾ dys	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	7	....	2 00 to 2 07	....	....	
Outside laborers.....	12	1	1 29 to 2 12	$1 16	....	
Inside laborers......	8	1	1 77 to 1 92	0 85	....	
Outside mechanics ..	7	....	1 50 to 2 50	....	....	
Outside mule drivers	2	1	1 25 to 1 83	1 17	....	
Inside mule drivers,	2	1	1 36 to 1 53	1 10	....	
Dumper.............	1	....	1 33	....	....	
Slate pickers	5	25	1 29	46 to 1 08	....	
Mining overseers....	2	....	3 12 & 4 54	....	....	
Shute bosses.........	2	....	1 50	....	....	

It is situated north of Girardsville, on the company's lands, and consists of slope sunk on the south dip of the 6-foot vein. A new outlet is now in course of completion, and will be open into the fan outlet. The breasts have double shutes. The plan of mining is satisfactory. Seventeen breasts are worked. A 20-horse fan is in use; ventilation is only medium; 3 engines, of 90-horse power, with 7 boilers, are in use.

LOCUST RUN.

Philadelphia and Reading Coal and Iron Company.

Quantity of tons and value in dollars of annual product: $43,053\frac{3}{20}$ tons; $106,889 45.

Whole number of persons employed: 255.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men...........	Daily wages paid men...........	Time in operation during year....	REMARKS.
Miners on contract...	33	....	$2 03 to 4 33	....	$136\frac{1}{4}$ dys	A general labor strike prevented shipments at this colliery till the middle of June.
Miners on wages.....	18	....	2 07	....	....	
Outside laborers.....	32	....	1 25 to 1 83	....	....	
Inside laborers......	48	6	1 77 to 2 17	$ 77	....	
Outside mechanics ..	17	1	1 50 to 2 50	1 12	....	
Outside mule drivers,	2	5	1 50	92 to 1 17	....	
Inside mule drivers,	12	5	1 28 to 2 04	85 to 1 07	....	
Dumpers	2	1	1 33 to 1 50	92	....	
Slate pickers	12	55	1 29	37 to 1 17	....	
Mining overseers...	3	....	2 31 to 4 33	....	....	
Shute bosses.........	2	....	1 80	....	....	
Shipper & telegraph operator............	1	....	1 54	....	....	

It consists of a slope sunk on the south dip of the Primrose vein (G) in 15 feet of coal. I found the ventilation to be ample. There is some gas in the mine, but by careful attendance it is not likely to become serious. There is an immense body of coal in the tract. The mine is in good condition. There are 4 engines of 140-horse power, with 22 boilers in use; one 20-horse fan and 4,500 yards of tracks are in use.

Rules and Regulations for the government of the workmen employed at the collieries of the Philadelphia and Reading Coal and Iron Company in 1875.

I. At any time between the hours of six and seven o'clock in the morning empty wagons will be furnished for the purpose of letting to the bottom of all shafts and slopes the persons employed in them.

II. No empty wagons will be furnished either for the purpose of hoisting or letting down men between the hours of 7 A. M. and 12 M., and between the hours of 1 and 5:30 P. M., unless by special instructions of the inside foreman. The engineers and top and bottom men will be held responsible for the carrying out this rule.

III. All persons employed by the day, either inside or outside, are expected to work ten hours for a day's pay, or fifty-eight hours per week for a week's pay. Any persons working less than this will receive wages proportionate for the time worked. The same rule to apply in all cases where overtime is worked, unless by special agreement with the mining superintendent.

IV. In all workings where there is fire-damp evolved, and naked lights used, no person or persons, other than the inside foreman and fire boss, must pass the first check-door without the consent of the fire boss. Where nothing but locked safety lamps are used no person, other than the inside foreman or fire boss, will enter any of the workings until permitted to do so by the fire boss.

V. All safety lamps must be handed into the lamp-house each evening for inspection and repairs. Persons using safety lamps will be charged with the cost of repairing when ordinary care has not been exercised in their protection.

VI. Persons not employed at the colliery are positively forbidden from speaking to, or in any way interfering with, the employees during working hours.

VII. All the rules and regulations of the ventilation laws to be fully enforced by the bosses and workmen.

VIII. No workman is to be discharged except for incompetency, bad workmanship, misconduct, drunkenness, or other good cause given by him. By order of the superintendent of the company's coal mines and collieries.

The foregoing rules and regulations are conspicuously posted at the company's collieries, warning their employees of the duty required of them to observe and obey, and the compliance to which the company's agents strictly enforce, which strongly tends to diminish accidents in and about their collieries.

Note.—The characteristics of collieries of the Philadelphia and Reading coal and iron company were furnished by the mine inspector, and have been attached, so far as they were applicable, to the foregoing reports of that company.

NORTHUMBERLAND COUNTY.

BEN. FRANKLIN COLLIERY.

Douty & Baumgardner, Shamokin, Pa.

Quantity of tons and value in dollars of annual product: 46,905 tons 09 cwt.; $116,000*.

Whole number of persons employed: 154.

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* Estimated.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract..	60	......	$2 80	......	8 mos	
Outside laborers.....	13	......	1 60	......	......	
Inside laborers......	29	......	1 88	......	......	
Outside mechanics...	5	......	2 43	......	......	
Outside mule drivers	......	3	......	$1 19	......	
Inside mule drivers,	9	......	1 83	......	......	
Dumpers	3	......	1 75	......	......	
Slate pickers.........	......	30	......	0 72	......	
Mining overseers....	2	......	5 00	......	......	

W. H. DOUTY, *Sup't.*

LOCUST GAP.

Graeber & Shepp, Locust Gap, Pa.

Quantity of tons and value in dollars of annual product: 19,000 tons; $41,800.

Whole number of persons employed: 240.

CLASSIFICATION.	No. of men......	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	70	......	$3 70	......	Run 90 days.	
Miners on wages.....	6	......	2 04	......		
Outside laborers.....	25	......	1 50	......		
Inside laborers	50	......	1 83	......		
Outside mechanics...	6	......	2 25	......		
Outside mule drivers	4	......	1 00	......		
Inside mule drivers,	6	......	1 66	......		
Slate pickers	12	59	1 00	50		
Mining overseers....	2	......	4 00	......		

Two slopes are used on the E vein in 22 feet of coal. A partition slate separates the vein forming the Nos. 8 and 9 seams. The lower vein is 7 feet thick. The breaker had been burned in spring and consequently deterred mining until a new one had been built up, and will be ready in the spring. Ventilation was not as good as should be, but efforts are now making to remedy the defects. 270-horse power engines, with 12 boilers, are in use; a first class Grubal fan has been put in operation, which will insure a plentiful supply of air for all purposes.

GRAEBER & SHEPP.

BLACK DIAMOND.

Wm. Schwenk & Co., Mount Carmel, Northumberland county, Pa.

Quantity of tons and value in dollars of annual product: 5,961.09 tons; value at mines, $12,519 04.

Whole number of persons employed: 54 men and boys.

CLASSIFICATION.	No. of men....	No. of boys	Daily wages paid men.........	Daily wages paid boys.........	Time in operation during year...	REMARKS.
Miners on contract ..	25	....	$2 00	....	87 days.	
Miners on wages.....	3	....	2 00	....	....	
Outside laborers.....	5	....	1 50 to 1 65	....	....	
Outside mechanic...	1	....	2 05	....	....	
Outside mule drivers	2	....	0 90	....	....	
Inside mule drivers,	2	....	1 75	....	....	
Slate pickers	15	....	....	$0 60	....	
Mining overseer.....	1	....	....	....	....	

The colliery is situated at Green Ridge, near Mount Carmel, Northumberland county. The twin veins are open by drift levels in 6 feet of coal each. Mining is principally confined to breast and pillar work. A new slope is sunk on the No. 8 vein in 8 feet of good coal. Large shipping developments are in progress for doing a large business this next season. Three engines, 120-horse power, with 4 boilers, are in use.

FRANKLIN COLLIERY.

Lovel, Booth & Elms, Shamokin, Pa.

Quantity of tons and value in dollars of annual product: 10,667$\frac{12}{20}$ tons; $28,124 72.

Whole number of persons employed: 50.

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	27	......	$2 50	....	9 mos.	
Miners on wages.....	2	......	1 83	....	....	
Outside laborers.....	2	2	1 50	60c	....	
Inside laborers......	2	......	1 83	....	....	
Outside mechanic....	1	......	....	....	....	Operator.
Outside mule driver	......	1	....	$1 00	....	
Inside mule drivers,	2	......	2 00	....	....	
Dumper.............	1	......	1 83	....	....	
Slate pickers........	......	10	60	....	....	

It consists of 2 drift levels. No. 10 vein is open in 4 feet of coal, and idle. The Red Ash vein is open in the counter drift, and mining is solely confined to robbing out pillars. Ventilation is effected by natural air currents, and is found sufficient for its purpose. One steam engine of 8-horse power, and one boiler is used; the general condition of the colliery is good.

LOVEL, BOOTH & ELMS.

EXCELSIOR COLLIERY.

Excelsior Coal Mining Company, Excelsior, Pa.

Quantity of tons and value in dollars of annual product: 43,463 tons, at $2 75; $119,523.

Whole number of persons employed: 182.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men............	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract ..	75	......	$3 20	......	....	
Outside laborers.....	19	......	1 60	......	....	
Inside laborers.......	29	......	2 00	......	....	
Outside mechanics ..	3	......	2 75	......	....	
Outside mule drivers	......	3	....	$1 05	....	
Inside mule drivers,	15	......	1 95	.....	....	
Slate pickers.........	15	43	1 27	0 75	....	
Mining overseers....	2	......	4 00	......	....	
Civil engineer	1	......	2 25	......	....	

Owing to the protracted strike we were in operation five and a half months last year.

P. WILLIARD.

BUCK RIDGE.

May, Audenried & Co.

Quantity of tons and value in dollars of annual product: 110,237 tons; $220,474 00.

Whole number of persons employed: 296.

CLASSIFICATION.	No. of men......	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year ...	REMARKS.
Miners on contract...	73	......	$2 50	....	10 mos.	
Miners on wages.....	11	......	2 16	....	....	
Outside laborers.....	48	......	1 56	....	....	
Inside laborers......	80	......	1 83⅓	....	....	
Outside mechanics ..	11	......	2 25	....	....	
Outside mule drivers,	2	6	2 00	$1 25	....	
Inside mule drivers,	16	6	1 66	1 50	....	
Dumpers............	6	......	1 50	....	....	
Slate pickers.........	......	38	....	62	....	
Mining overseers....	8	......	3 00	....	....	
Civil engineers......	1	......	2 00	....	....	

It consists of two slopes and five drift openings. Twenty-five men are employed in robbing out pillars in these drifts. A slope is sunk through these levels, and a cross-cut tunnel opens No. 9 vein at the foot of the slope. Both gangways are comparatively idle. Twenty-five breasts are open in this slope. No. 9 vein is open by a new slope, which will extend 100 yards under the level of the old slope. The colliery is ventilated by a 20-horse power fan. A good traveling way is available in the west panel. The power is 200, with 14 boilers.

MAY, AUDENRIED & CO.,
Per Geo. Raup.

HENRY CLAY COLLIERY.

J. Langdon & Co., Elmira, N. Y.

Quantity in tons and value in dollars of annual product: 85,945 tons=$193,376 25.

Whole number of persons employed: 189.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year...	REMARKS.
Miners on contract...	70	......	$2 45	....	267 dys.	
Miners on wages.....	2	......	2 16	....	"	
Outside laborers.....	16	5	1 60	$1 10	"	
Inside laborers......	30	......	1 83	....	"	
Outside mechanics ..	3	......	2 25	....	307 dys.	
Inside mechanics....	2	......	2 35	....	285 dys.	
Outside mule drivers	......	6	....	1 00	267 dys.	
Inside mule drivers,	5	6	2 25	1 83	"	
Dumpers	1	1	1 66	1 16	"	
Slate pickers	......	40	....	70	"	
Mining overseer.....	2	......	3 00	....	300 dys.	

It consists of a slope opening the No. 8 vein on its western limits. Mining is confined to robbing out pillars. Six feet of slate separates Nos. 8 and 9 veins. Ventilation is effected by a 20-horse power fan, located on the counter drift. Its results are not adequate to produce a proper supply of air for ventilating the different panels. Notices have been served upon the superintendent to remedy all defects, and to place the colliery in a lawful working condition. Since then efforts are making to comply with the legal requirements of the act of Assembly.

A. FULTON, *Supt.*,
Per O. C. CUBACH.

BURNSIDE.

Isaac May & Co.

Quantity of tons and value in dollars of annual product: 108,247 tons; $210,364.

Whole number of persons employed: 262.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid to boys........	Time in operation during year....	REMARKS.
Miners on contract...	90	......	$2 50	....	10 mos.	
Miners on wages.....	10	......	2 00	....	....	
Outside laborers.....	22	......	1 50	....	....	
Inside laborers......	50	......	1 66⅔	....	....	
Outside mechanics ..	8	......	2 16⅔	....	....	
Outside mule drivers	1	6	....	....	....	
Inside mule drivers,	2	8	2 00	$1 50	....	
Dumpers	2	......	1 75	....	....	
Slate pickers.........	5	55	1 25	60	....	
Mining overseer......	3	......	4 00	....	....	

It consists of a double track slope sunk on the 9-feet vein, and sunk to the basin; the seam is nearly flat; mining in the lower or No. 8 vein is suspended. Ventilation is good, and is produced by a 20-horse power fan. Drainage is effected by a 14-inch pump; 4 engines of 180-horse power, with 11 boilers, and all their appointments are in good condition. A new slope is being sunk, intending to work the west basin. Four fatal accidents occurred during the year.

ISAAC MAY & CO.

MARTON & BRO.

Thomas Marton and Robert Marton, Mount Carmel, Northumberland county, Pa.

Quantity of tons and value in dollars of annual product: 8,843 tons; $12,910 78.

Whole number of persons employed: 42.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	18		$2 50		7 mos.	
Outside laborers.....	2		1 83			
Outside mechanic....	1		2 50			
Outside mule drivers	3			$1 16		
Inside mule drivers,	3			1 16		
Slate pickers.........		14		80		
Mining overseer.....	1			2 50		
Civil engineer.......	1			2 50		
Boss................	1			2 50		

It is situated west of Mount Carmel, and consists of two drift openings, but mining is chiefly confined to robbing out pillar coal from a small local basin. A 15-horse power engine, with one boiler is used. The general condition of the colliery is good.

THOMAS MARTON & BRO.

RELIANCE.

Thomas Baumgardner & Co. City office, 311 Walnut street, Philadelphia.

Quantity of tons and value in dollars of annual product: 39,714.03 tons, value at mines, $85,829 26.

Whole number of persons employed: average about 205.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	70		$2 25		135¼ dys	
Miner on wages	1		2 33			
Outside laborers.....	21		1 50			
Inside laborers	2		2 17			
Outside mechanics ..	6		2 25			Including engineers.
Outside mule drivers	4			$1 20		
Inside mule drivers,	6		1 67			
Slate pickers.........	75	75	1 25			Old men and boys.
Mining overseers....	2					Including Gen'l Supt.
Teamsters..........	1		1 67			Average.
Choppers	1		1 67			
Stable boss	1		50 00			Per month.
Door boys & runners,		4		91		

A slope 370 yards deep in two lifts opens the E twin veins. The two veins are formed into one on the lower west panel, while on the east side 9 feet of a partition slate separates 8 and 9 veins. The old slope level is still working, and also is the water level lift working, but mining is chiefly confined to finishing breasts and robbing out pillars. Ventilation is effected by the operation of a 20-horse power fan, and gives satisfactory results. The general condition of the colliery is good. 245-horse power engines, with 11 boilers, are in use; only one pole pump is needed for drainage.

A. B. DAY, *Supt.*

ENTERPRISE.

Enterprise Coal Company, 311 Walnut street, Philadelphia.

Quantity of tons and value in dollars of annual product: 80,000 tons; value at mines, say $200,000.

Whole number of persons employed: 184 men; 40 boys—224.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men......	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	80	......	$2 67	....	141 dys.	
Outside laborers.....	21	......	1 66	....	141 "	
Inside laborers......	37	2	1 83	$ 83	141 "	
Outside mechanics...	8	......	2 25	....	311 "	
Inside mechanic......	1	......	2 25	....	311 "	
Outside mule drivers	2	2	1 60	83	141 "	
Inside mule drivers,	10	......	1 88	....	141 "	
Dumpers	3	......	1 50	....	141 "	
Slate pickers	18	36	1 20	67	141 "	
Mining overseer.....	1	......	5 00	....	313 "	
Outside boss.........	1	......	2 50	....	313 "	
Watchman	1	......	1 33	....	365 "	
Stable boss	1	......	2 00	....	365 "	

JOS. OLDKNOW, *Treas and Secretary.*

GEORGE FALE'S COLLIERY.

A. A. Heim & Goodwill, Shamokin, Pa.

Quantity of tons of annual product: 6,005.06 tons to date, June 1, 1876.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys.....	Time in operation during year....	REMARKS.
Miners on contract...	25		$3 00			
Outside laborers.....	38		1 33			
Inside laborers......	14		1 65	$1 10		
Outside mechanic ...	1		2 50			
Outside mule drivers	4		$1 00 to $1 33			
Inside mule drivers,	3		1 75			
Dumpers	4					
Slate pickers.........	12			$ 75 to 1 00		
Mining overseer.....	1					
Civil engineer.......	1					

It consists of a slope sunk 220 yards on the north dip of No. 10 vein. Mining on the east panel is confined to robbing back pillars. A tunnel opens No. 11 vein in 7½ feet of coal. The chief supply is mined in the basin measures and some on the counter gangway. An air shaft has been open and a furnace erected for ventilating the mine, which gives satisfactory results. A 40-horse power engine, with 6 boilers, are used, and 2 pumps do the drainage.

(Signed) A. A. HEIM & GOODWILL.
Per HUNTZINGER.

BEAR VALLEY COLLIERY.

A. A. Heim & Goodwill, Shamokin, Northumberland county, Pa.

Quantity of tons of annual product: 13,578.19, to date, June 1st, 1876.

Whole number of persons employed: 279.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	60		$3 00			
Miners wages.........	10		1 92½			
Outside laborers.....	50		1 42			
Inside laborers......	70		1 65			
Outside mechanics ..	4		2 00			
Outside mule drivers		4		$1 00		
Inside mule drivers,	4	6	1 92	1 15		
Dumpers	4					
Slate pickers	65					
Mining overseer.....	1					
Civil engineer.......	1					

A tunnel south opens the Nos. 8 and 9 twin veins in 8 and 10 feet of coal. The east and west gangways reach the boundary lines. Ventilation is produced by the action of 2 furnaces, located adjacent to both veins and renders ample satisfaction. Eastward the vein lies flat, while on the west the dip of the vein is 60°. One engine of 30-horse power with two boilers, are in use.

A. A. HEIM & GOODWILL,
Per Capt. Huntzinger.

LUKE FIDLER.

Mineral Railroad and Mining Company, Shamokin, Pa.

Quantity of tons and value in dollars of annual product: 102,981.05 tons.

Whole number of persons employed: 338.

CLASSIFICATION.	No. of men....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys............	Time in operation during year....	REMARKS.
Miners on contract...	106	......	$2 40	....	228 days and 4 hours.	
Miners on wages.....	30	......	2 13	....		
Outside laborers.....	27	......	1 67	....		
Inside laborers......	32	......	1 83	....		
Outside mechanics ..	12	......	2 35	....		
Outside mule drivers	6	......	1 25	....		
Inside mule drivers,	33	......	1 55	....		
Dumpers............	3	......	1 75	....		
Slate pickers........	......	70	....	$ 83		
Mining overseer	1	......	3 85	....		
Coal pushers	......	18	....	1 08		

A slope through 20 yards of rock strata to meet a tunnel which opens the Nos. 8, 9, 10, 11 and 12 coal veins, which latter lift is used for drainage outlet. An inside slope is sunk on No. 10 vein, and its course opens the twin veins, 8 and 9. Eight feet of coal are worked in No. 8, and seven feet of coal are worked in No. 9 vein. Two self-acting planes open up a series of counter-workings, with 46 breasts open. The colliery is well ventilated by a 20-horse power fan, and is generally in a good condition; 5 engines, of 175-horse power, with 8 boilers are in use.

CAMERON.

Mineral Railroad and Mining Company.
Quantity of tons of annual product: 265,294.06 tons.
Whole number of persons employed: 706.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men.....	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	275	.....	$2 75	....	265 days and 3 hours.	
Miners on wages	45	......	2 20	....		
Outside laborers.....	85	......	1 66	....		
Inside laborers	60	......	2 00	....		
Outside mechanics ..	30	......	2 35	....		
Outside mule driver,	28	......	1 35	....		
Inside mule drivers and loaders.	70	......	1 75	....		
Dumpers............	7	......	1 66	....		
Slate pickers	......	103	....	82		
Mining overseer.....	2	......	4 75	....		
Civil engineers......	1	......	....	....		

It consists of 2 slopes and 4 drift openings on Nos. 8, 9 and 10 veins. A local basin is open by a slope, where 12 men are employed in robbing pillars and five breasts are working. This panel has been ventilated by a 20 horse power fan. The No. 2 slope has 12 breasts open in its western panel, and 10 breasts are open in its eastern panel. In this level No. 8 vein is opened by a cross cut, with three breasts open, and 7 breasts on its eastern panel. Six breasts are open on No. 7 vein. The Tape vein is also open by a cross-cut. There are 16 gangways open in the colliery and 49 breasts are working. Four engines—490-horse power; 17 boilers in use. Ventilation is very good, and produced by the operation of two fans. Two powerful steam pumps are in use. The condition of the colliery and all its appointments are satisfactory.

HOLDEN CHESTER, *Supt.*

HICKORY RIDGE.

Mineral Railroad and Mining Company.
Quantity of tons of annual product: 19,460.11 tons.
Whole number of persons employed: 194.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	90		$2 25		165 days & 9 hours.	
Miners on wages.....	12		2 03			
Outside laborers.....	23		1 60			
Inside laborers......	31		1 94			
Outside mechanics...	6		2 25			
Outside mule drivers	3		1 21			
Inside mule drivers .	3		1 50			
Dumpers............	3		1 37			
Slate pickers........		22		$1 00		
Mining overseer.....	1		3 85			

It consists of a tunnel and a slope opening. No. 9 vein is worked by the slope in 6 feet of coal, with 5 breasts working, and on the west side the coal is 8 feet thick. No. 8 vein is not worked at present. Exhaust steam is utilized for ventilating the mine, discharged into the upcast air-course. A 20-horse power fan is to be introduced for this purpose; 178 yards of a tunnel opens the south dip of the vein, where 16 breasts are working, and ventilated by the operation of a furnace; the power is=to 190 horse, with 9 boilers, in use. The colliery, with all its appointments, are in good condition, and the men in charge evincing great industry in getting the colliery in good order.

HOLDEN CHESTER, *Supt.*

HICKORY SWAMP.

Mineral Railroad and Mining Company, Shamokin, Northumberland county, Pa.

Quantity of tons and value in dollars of annual product: 70,854.04 tons.

Whole number persons employed: 315.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract ..	128		$2 25		184 days and 7 hours.	
Miners on wages	21		2 13			
Outside laborers.....	30		1 67			
Inside laborers......	28		1 92			
Outside mechanics ..	8		2 35			
Outside mule drivers	12		1 37			
Inside mule drivers and loaders........	17		1 75			
Dumpers............	2		1 75			
Slate pickers........		68		90c		
Mining overseer.....	1		4 50			

It consists of a slope opening the 8 vein. The west panel is nearly exhausted of coal. Nos 8 and 9 veins are opened in the east panel in 7 and 6 feet of good coal. I find the colliery in excellent condition, and ventilation is produced by a 20-horse power fan ; 140-horse power engine, with 7 good boilers are in use ; the general condition of the colliery is satisfactory.

HOLDEN CHESTER, *Super't.*

COAL STATEMENT FOR 1876.

AMOUNT *of coal shipped from the several collieries of Northumberland county during the year* 1876, *the coal trade of the Shamokin region from its commencement in* 1839 *to the present time, including a period of* 27 *years. Compiled by J. J. John.*

COLLIERIES.	OPERATORS.	Tonnage, 1876.		Year.	Total.
1. Cameron	Mineral R. R. & Mining Co.	178,662.16	1	1839	11,930
2. Big Mountain	Patterson, Llewellyn & Co.	105,530.00	2	1840	15,505
3. Luke Fidler	Mineral R. R. & Mining Co.	100,554.11	3	1841	21,463
4. Henry Clay	J. Langdon & Co	83,374.14	4	1842	10,000
5. Monitor	Geo. W. Johns	81,620.06	5	1843	10,000
6. Enterprise	Enterprise Coal Co	72,744.05	6	1844	13,087
7. Alaska Shaft	P. & R. C. & I. Co	71,377.02	7	1845	10,000
8. Burnside	Isaac May & Co	60,506.19	8	1846	12,572
9. Stuartville	Wm. Montelius	60,051.18	9	1847	14,904
10. Buck Ridge	May, Audenried & Co	55,182.09	10	1848	19,356
11. Bear Valley	A. A. Heim & Goodwill	55,007.06	11	1849	19,650
12. Locust Gap	Graeber & Shepp	52,371.16	12	1850	19,921
13. Trevorton	P. & R. C. & I Co	38,119.11	13	1851	24,899
14. Excelsior	Excelsior Mining Co	37,933.01	14	1852	25,846
15. Black Diamond,	Schwenk & Co	35,207.02	15	1853	15,000
16. Reliance	Reliance Coal Co	32,951.00	16	1854	63,500
17. Ben. Franklin	Douty & Baumgardner	31,145.01	17	1855	116,117
18. Hickory Swamp	Mineral R. R. & Mining Co.	30,872.04	18	1856	210,518
19. Greenback	Thos. Gorman	23,917.04	19	1857	266,517
20. Locust Spring	P. & R. C. & I. Co	22,615.11	20	1858	242,579
21. Stirling	Fulton & Kendrick	20,394.12	21	1859	305,043
22. Helfenstein	P. & R. C. & I. Co	16,221.17	22	1860	300,256
23. Lancaster	Smith & Keiser	16,146.00	23	1861	290,928
24. Geo. Fales	A. A. Heim & Goodwill	15,189.15	24	1862	304,865
25. Hickory Ridge	Mineral R. R. & Mining Co.	9,022.17	25	1863	337,136
26. Morton	Thos. Morton	8,899.10	26	1864	389,779
27. Franklin	Lovell & Booth	4,076.01	27	1865	484,257
28. Shamokin	R. D. Bower	1,288.04	28	1866	610,809
29. Royal Oak	Tillet & Bro	700.00	29	1867	533,815
30. Marshall	Reese & Bro	68.13	30	1868	911,784
				1869	974,015
				1870	1,025,515
				1871	1,213,096
				1872	1,221,326
				1873	1,234,063
				1874	1,221,550
				1875	1,628,683
				1876	1,321,752
Total for 1876		1,321,752.05			15,452,542

RECAPITULATION.

Shipments for 1876	1,321,752
Estimated consumption at breaker	70,000
Total for 1876	1,391,752
Total for 1875	1,628,683
Loss for 1876	236,931

SULLIVAN COUNTY.

BERNICE.

State Line and Sullivan Railroad Company.

Quantity of tons and value in dollars of annual product: 44,065 tons; value, $110,162.

Whole number of persons employed: 129.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	70		$2 00		6½ mos.	10 boys' average wages 75 cents per day.
Outside laborers	10		1 40			
Inside laborers	2		1 80			
Outside mechanics	2		2 00			
Outside mule drivers	2		1 60			
Inside mule drivers,	2		1 60			
Weigh master	1		1 60			
Dumpers	2		1 40			
Slate pickers	20		1 00			
Mining overseer	1		2 37			
Civil engineer	1		4 80			

During the summer of 1875 a breaker was built with a capacity of 300 tons prepared coal per day of 10 hours. Commenced shipping coal on October 1, 1875, and worked most of the time till June, 1876. During the three months of 1875, shipped 19,087 tons; and during the year 1876, 44,065 tons. That portion of the field now being mined, the coal averages 8 feet in thickness.

STATE LINE AND SULLIVAN R. R. CO.

WILKESBARRE COAL COMPANY.

KIDDER No. 3.

Lehigh and Wilkesbarre Coal Company—Wilkesbarre Division.

Quantity of tons and value in dollars of annual product: 55,912 tons; $111,824.

Whole number of persons employed: 324.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	49				131 dys	
Miners on wages....	10		$2 25			
Outside laborers.....	47		1 50			
Inside laborers......	101	9	1 90 to 2 25	85 c.		
Outside mechanics...	3		2 25			
Inside mechanics....	9		2 25			
Outside mule drivers,	4		1 35			
Inside mule drivers,	18		1 35 to 1 70			
Dumpers............	7		1 50			
Slate pickers.........		59		55 to 80c		
Mining overseers....	1		$125 pr mo.			
Hoisting engineers..	2		2 32			
Firemen.............	4		1 90			
Fire boss............	1		$72 pr mo.			

E. B. AYRES, *Cashier.*

EMPIRE No. 4.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 132,975 tons; $265,950.

Whole number of persons employed: 826.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	136				131 dys.	
Miners on wages.....	16		$2 25			
Outside laborers.....	67		1 50			
Inside laborers	277	63	$1 90 to 2 25	85c		
Outside mechanics...	4		2 25			
Inside mechanics....	16		2 25			
Outside mule drivers	4		1 40			
Inside mule drivers,	54		1 40 to 1 90			
Dumpers	19		1 50			
Slate pickers		142		50c to $1 00		
Mining overseer.....	1		125 per mo.			
Hoisting engineers...	13		$2 32			
Firemen.............	11		1 80			
Colliery foreman	1		75 per mo.			
Fire bosses	2		72 "			

E. B. AYRES, *Cashier.*

EMPIRE, No. 5.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 42,688 tons; $85,376.

Whole number of persons employed: 282.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	39				131 dys.	
Outside laborers.....	39		$1 50			
Inside laborers.......	93	15	$1 90 to 2 25	$ 85		
Outside mechanics...	3		2 25			
Inside mechanics....	4		2 25			
Outside mule drivers	6		1 25 to 1 50			
Inside mule drivers,	9		1 25 to 1 70			
Dumper..............	7		1 50			
Slate pickers		60		$ 50 to 1 00		
Mining overseer.....	1		100 per mo.			
Hoisting engineer...	2		$2 32			
Firemen.............	2		2 90			
Fire boss	1		72 per mo.			
Colliery foreman....	1		75 "			

E. B. AYRES, *Cashier.*

HARTFORD No. 6.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 123,792 tons; $247,584.

Whole number of persons employed: 501.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	107				138 dys.	
Miners on wages	14		$2 25			
Outside laborers	67		1 50			
Inside laborers	32		1 75			
Outside mechanics	12		2 25			
Inside mechanics	6		2 25			
Outside mule drivers		7		$1 35		
Inside mule drivers,		7		1 90		
Dumpers	4		1 50			
Slate pickers		122		70		
Mining overseers	2		100 00 per mo.			
Mining laborers	107		2 10			
Door boys		14		85		

E. B. AYRES, *Cashier.*

AUDENREID No 7.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 22,565 tons; $45,130.

Whole number of persons employed: 530.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	114				131 dys.	
Miners on wages	14		$2 25			
Outside laborers	61	29	1 50	85c		
Inside laborers	157		$1 90 to 2 25			
Outside mechanics	5		2 25 to 2 47			
Inside mechanics	13		2 25 to 2 93			
Outside mule drivers	5		1 12			
Inside mule drivers,	21		1 25 to 1 70			
Dumpers	14		1 50			
Slate pickers		85		50c to $1 00		
Mining overseer	1		125 per mo.			
Colliery foreman	1		83 "			
Fire bosses	2		72 "			
Hoisting engineers	6		2 25 to 2 32			
Firemen	2		1 80			

E. B. AYRES, *Cashier.*

JERSEY, No. 8.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 40,126 tons; $80,252.

Whole number of persons employed: 217.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	13				116 dys.	
Miners on wages	29		$2 25			
Outside laborer	47		1 50			
Inside laborers	32		1 75			
Outside mechanics	3		2 25			
Outside mule drivers		5		$1 50		
Inside mule drivers,		7		1 90		
Dumpers	2		1 50			
Slate pickers		68		70		
Mining overseer	1		$100 per mo.			
Door boys		4		85		
Miners' laborers	6		$2 10			

E. B. AYRES, *Cashier.*

SUGAR NOTCH No. 9.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 86,625 tons; $173,250.

Whole number of persons employed: 452.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	120		$3 00		127 dys.	
Miners on wages	8		2 25			
Outside laborers	60		125 to 1 55			
Inside laborers	143		1 90			
Outside mechanics	3		2 25			
Inside mechanics	3		2 25			
Outside mule drivers		7		$1 00 to 1 40		
Inside mule drivers,		29		1 10 to 1 50		
Slate pickers		76		43 to 1 00		
Mining overseers	3		$100 pr mo.			

E. B. AYRES, *Cashier.*

SUGAR NOTCH NO. 10.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 54,546 tons; $109,092.

Whole number of persons employed: 468.

CLASSIFICATION.	No. of men.	No. of boys.	Daily wages paid men.	Daily wages paid boys.	Time in operation during year.	REMARKS.
Miners on contract	151		$3 60		124 dys.	
Miners on wages	16		2 25			
Outside laborers	48		1 25 to 1 55			
Inside laborers	129		1 90			
Outside mechanics	6		2 25			
Inside mechanicss	1		2 03			
Outside mule drivers		6	1 00 to 1 40			
Inside mule drivers,		7	1 00 to 1 50			
Slate pickers		103	43 to 1 00			
Mining overseer	1		$100 per mon			

(Signed) E. B. AYRES, *Cashier.*

LANCE, No. 11.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 62,990 ton; $125,980.

Whole number of persons employed: 306.

CLASSIFICATION.	No. of men.	No. of boys.	Daily wages paid men.	Daily wages paid boys.	Time in operation during year.	REMARKS.
Miners on contract	74				133 dys.	
Miners on wages	6		$2 25			
Outside laborers	20		1 50			
Inside laborers	124		1 70			
Outside mechanics	6		2 25			
Inside mechanics	3		2 25			
Outside mule drivers		4		$1 25		
Inside mule drivers,		21		$1 00 to 1 75		
Slate pickers	8	38	1 25	40 to 1 00		
Mining overseers	2					

E. B. AYRES, *Cashier.*

DODSON No. 12.

Lehigh and Wilkesbarre Coal Company.

Quantity in tons and value in dollars of annual product: 49,441 tons: $98,882.

Whole number of persons employed: 393.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	110				98½ dys	
Miners on wages	8		$2 25			
Outside laborers	24		1 50			
Inside laborers	130		1 70			
Outside mechanics	8		2 25			
Inside mechanics	4		2 25			
Outside mule drivers		3		$1 25		
Inside mule drivers,		34		1 00 to 1 75		
Slate pickers	10	60	1 25	40 to 1 00		
Mining overseers	2					

E. B. AYRES, *Cashier.*

GAYLORD No. 13.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 78,665 tons; $157,330.

Whole number of persons employed: 350.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid to boys	Time in operation during year	REMARKS.
Miners on contract	97				141¾ dys.	
Miners on wages	2		$2 25			
Outside laborers	26		1 50			
Inside laborers	115		1 70			
Outside mechanics	6		2 25			
Inside mechanics	2		2 25			
Outside mule drivers		3		$1 25		
Inside mule drivers,		35		1 00 to 1 75		
Slate pickers	11	51	1 25	40 to 1 00		
Mining overseers	2					

E. B. AYRES, *Cashier.*

NOTTINGHAM No. 15.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 70,615 tons; $141,230.

Whole number of persons employed: 555.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	115				101 dys.	
Miners on wages	10		$2 25			
Outside laborers	45		1 50			
Inside laborers	200		1 70			
Outside mechanics	7		2 25			
Inside mechanics	6		2 25			
Outside mule drivers		5		$1 25		
Inside mule drivers,		50		$1 00 to 1 75		
Slate pickers	15	100	1 25	40c to 1 00		
Mining overseers	2					

E. B. AYRES, *Cashier.*

REYNOLDS, No. 16.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 73,163 tons; $146,326.

Whole number of persons employed: 300.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	65				145½ ds.	
Miners on wages	5		$2 25			
Outside laborers	30		1 50			
Inside laborers	80		1 70			
Outside mechanics	5		2 25			
Inside mechanics	3		2 25			
Outside mule drivers		10		$1 25		
Inside mule drivers,		30		$1 00 to 1 75		
Slate pickers	10	60	1 25	40 to 1 00		
Mining overseers	2					

E. B. AYRES, *Cashier.*

HONEY BROOK BREAKER No. 4.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 51,729 tons; $102,458.

Whole number of persons employed: 224 men and boys.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	61		$2 86 to 3 25		131 2-10 days.	
Miners on wages	2		2 22			
Outside laborers	16		1 35 to 1 50			
Inside laborers	32		1 81			
Outside mechanics	5		2 25 to 2 65			
Inside mechanics	3		1 90 to 2 22			
Outside mule drivers		2		$1 00 to $1 25		
Inside mule drivers, door boys, etc	6	21	1 81	90 to 1 50		
Dumpers & platform men	8		1 60			
Slate pickers	19	40	1 17 to 1 25	46 to 90		
Mining overseers	1		4 00			
Outside bosses	1		3 00			
Engineers	3		1 85 to 2 57			
Firemen	4		1 80			

E. B. AYRES, *Cashier.*

HONEY BROOK, BREAKER No, 1.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 55,637 tons; $111,274.

Whole number of persons employed: 258 men and boys.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	61		$3 27 to $5 15		128 and 5-10 days.	
Miners on wages	2		2 22			
Outside laborers	23		1 35 to 1 50			
Inside laborers	62		1 81 to 2 10			
Outside mechanics	9		2 25 to 2 75			
Inside mechanics	2		2 20			
Outside mule drivers		5		75c to $1 25		
Inside mule drivers, door boys, &c	12	7	1 81	90c to 1 35		
Dumpers & platform men	10		1 60			
Slate pickers	16	36	1 17 to 1 25	35c to 75c		
Mining overseer	1		5 00			
Outside boss	1		3 00			
Inside boss	1		2 50			
Engineers	6		2 30			
Firemen	4		1 80			

E. B. AYRES, *Cashier.*

HONEY BROOK BREAKER No. 5.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 85,229 tons; $170,458.

Whole number of persons employed: 282.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	79		$2 99 to 4 82		140 dys.	
Miners on wages	5		2 22			
Outside laborers	23		1 35 to 1 50			
Inside laborers	63		1 81			
Outside mechanics	6		2 25 to 2 65			
Inside mechanics	2		2 08			
Outside mule drivers		5		75 to $1 25		
Inside mule drivers, door boys, &c	7	17	1 81	90 to 1 50		
Dumpers & platform men	8		1 60			
Slate pickers	13	42	1 17 to 1 25	45 to 90		
Outside boss	1		2 70			
Inside bosses	2		2 50 to 2 66			
Engineers	5		2 60			
Firemen	4		1 80			

E. B. AYRES, *Cashier.*

BREAKER, No. 6.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 55,989 tons; $111,978.

Whole number of persons employed: 268.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	30		$2 50 to $5 00		6 mos.	
Miners on wages	10		2 10			
Outside laborers	45	12	1 33 to 1 60	$ 85 to $1 25		
Inside laborers	36		1 65 to 1 80			
Outside mechanics	11		1 75 to 2 00			
Outside mule drivers	2	8	1 70	85 to 1 12		
Inside mule drivers,		7		1 00 to 1 65		
Dumpers	2		1 60			
Slate pickers	10	92	1 00	36 to 80		
Mining overseers	2		$83 33 to $125 per month.			
Door tenders				80		
Stableman	1		$ 50			

E. B. AYRES, *Cashier.*

NESQUEHONING BREAKER.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 63,398 tons; $126,796.

Whole number of persons employed: 316.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	52		$250 to $5 00		6 mos.	
Miners on wages.....	12		2 10			
Outside laborers.....	38		1 33 to 1 60			
Inside laborers......	69		1 65 to 1 80			
Outside mechanics...	34		1 75 to 2 60			
Inside mechanics....	3		2 10			
Outside mule drivers		10	1 70	85c to $1 12		
Inside mule drivers,		13		$1 00 to1 65		
Dumpers............	3		1 60			
Slate pickers........	4	70	1 00	36c to 85c		
Mining overseer.....	2		$83 33 to $125 per month.			
Door tenders.........		15		80c		
Stableman.	1		$50 per mo.			

E. B AYRES, *Cashier.*

TRESCKOW BREAKER No. 2.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 63,341 tons; $126,682.

Whole number of persons employed: 344.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	90		$2 45 to 4 24		125 8-10 days.	
Miners on wages.....	3		2 22			
Outside laborers.....	32		1 35 to 1 50			
Inside laborers......	84		2 00 to 2 25			
Outside mechanics ..	11		2 25 to 2 65			
Inside mechanics....	2		2 10			
Outside mule drivers,		5		75 to $1 25		
Inside mule drivers, door boys, &c.....	12	17	1 81	90 to 1 35		
Dumpers & platform men...............	8		1 60			
Slate pickers.........	5	60	1 17 to 1 25	35 to 75		
Mining overseer.....	1		5 00			
Outside bosses.......	1		3 50			
Inside bosses........	2		2 25			
Engineers...........	6	1	2 30	1 20		
Firemen..............	4		1 80			

E. B. AYRES, *Cashier.*

BREAKER No. 4.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 53,749 tons; $107,498.

Whole number of persons employed: 334.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	54		$2 50 to 5 00		6 mos.	
Miners on wages	11		2 10			
Outside laborers	41	4	1 33 to 1 60	85c.		
Inside laborers	55		1 65 to 1 80			
Outside mechanics	19		1 75 to 2 60			
Inside mechanics	4		2 10			
Outside mule drivers,	2	6	1 50 to 1 60	85c. to $1 00		
Inside mule drivers,		20		1 00 to 1 65		
Dumpers	3		1 60			
Slate pickers	16	76	1 00 to 1 50	36 c. to 85c.		
Mining overseers	2		$83 33 to 125 00			
Door tenders		20		80c.		
Stableman	1		50 00			

E. B. AYRES, *Cashier.*

BREAKER No. 5.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 50,124 tons; $100,248.

Whole number of persons employed: 315.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	26		$2 50 to $5 00		6 mos.	
Miners on wages	35		2 10			
Outside laborers	45		1 33 to 1 60			
Inside laborers	76	8	1 65 to 1 80	85c to $1 25		
Outside mechanics	12		1 75 to 2 60			
Outside mule drivers		6		85c to 1 12		
Inside mule drivers,		18		$1 to 1 65		
Dumpers	3		1 60			
Slate pickers	2	73	1 00	36c to 85c		
Mining overseers	2		$83 33 per mo. 125 00 "			
Door tenders		8		80c		
Stableman	1		50 00 "			

E. B. AYRES, *Cashier.*

BREAKER No. 8.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 48,952 tons; $97,904.

Whole number of persons employed: 392.

CLASSIFICATION.	Number of men,	Number of boys,	Daily wages paid men..........	Daily wages paid men..........	Time in operation during year....	REMARKS.
Miners on contract ..	56	......	$2 50 to 5 00	....	6 mos.	
Miners on wages.....	33	......	2 10	....	....	
Outside laborers.....	57	15	1 33 to 1 60	85c to $1 25	....	
Inside laborers	65	......	1 65 to 1 80	....	....	
Outside mechanics ..	7	......	1 75 to 2 60	....	....	
Inside mechanics....	8	......	2 10	....	....	
Outside mule drivers,	......	6	....	85 to 1 12	....	
Inside mule drivers..	......	20	....	1 00 to 1 65	....	
Dumpers	2	......	1 60	....	....	
Slate pickers.........	7	105	1 00	36c. to 85c.	....	
Mining overseers....	2	......	$83 33 & $125	per month.	....	
Door tenders	......	7	....	80c.	....	
Stablemen...........	1	1	50 00	75c.	....	

E. B. AYRES, *Cashier.*

BREAKER, No. 9.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 61,327 tons; $122,654.

Whole number of persons employed: 361.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	60	....	$2 50 to $5 00	....	6 mos.	
Miners on wages.....	18	....	2 10	....	....	
Outside laborers.....	28	13	1 33 to 1 60	$ 85 to $1 25	....	
Inside laborers......	86	....	1 65 to 1 80	....	....	
Outside mechanics...	11	....	1 75 to 2 60	....	....	
Inside mechanics....	3	....	2 10	....	....	
Outside mule drivers	1	12	1 70	85 to 1 12	....	
Inside mule drivers,	2	23	1 65 to 1 80	1 00 to 1 65	....	
Dumpers	3	....	1 60	....	....	
Slate pickers.........	8	89	1 00	36 to 85	....	
Mining overseers....	2	..	$83 33 per mo. 125 00 "	....	....	
Stablemen...........	1	1	50 00 "	75	....	

E. B. AYRES, *Cashier.*

BREAKER No. 10.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 63,886 tons; $127,772.

Whole number of persons employed: 351.

CLASSIFICATION.	No. of men....	No. of boys	Daily wages paid men...........	Daily wages paid boys...........	Time in operetion during year....	REMARKS.
Miners on contract	55	....	$2 50 to 5 00	....	6 mos.	
Miners on wages	23	....	2 10	....	....	
Outside laborers	27	5	1 33 to 1 60	85 to $1 25	....	
Inside laborers	90	....	1 65 to 1 80	....	....	
Outside mechanics	18	....	1 75 to 2 60	....	....	
Inside mechanics	7	....	2 10	1 12 to 85	....	
Outside mule drivers	....	4	....	....	....	
Inside mule drivers,	....	15	....	1 00 to 1 65	....	
Dumpers	2	....	1 60	....	....	
Slate pickers	19	75	1 00	36 to 85	....	
Mining overseers	2	..	$83 33 per mo 125 00 “	....	....	
Door tenders	....	7	....	80	....	
Stablemen	2	....	50 00 per mo	....	....	

E. B. AYRES, *Cashier.*

BREAKER, No. 11.

Lehigh and Wilkesbarre Coal Company.

Whole number of persons employed: 48.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract	10	....	$2 50 to $5 00	....	12 mos.	
Miners on wages	8	....	2 10	....	....	
Outside laborers	8	....	1 33 to 1 60	....	....	
Inside laborers	9	....	1 65 to 1 80	....	....	
Outside mechanics	7	....	1 75 to 2 60	....	....	
Outside mule drivers	....	3	....	$ 85 to $1 12	....	
Inside mule drivers,	....	2	....	1 00 to 1 65	....	
Mining overseers	1	....	$125 per mo.	....	....	
Stableman	....	....	50 “	....	....	

E. B. AYRES, *Cashier.*

BREAKER No. 18.

Lehigh and Wilkesbarre Coal Company, Wanamie, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 78,467 tons; $156,934.

Whole number of persons employed: 557.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid men..........	Time in operation during year...	REMARKS.
Miners on contract ..	114				156	
Miners on wages.....	38		$2 25		156	
Outside laborers.....	63	7	1 50 to 1 75	$1 00 to $1 50	156	
Inside laborers......	156	10	1 50 to 2 10	85 to 1 75	156	
Outside mechanics ..	36		2 25.		300	
Inside mechanics....	2		2 00		365	
Outside mule drivers	4	2	1 60	1 40	156	
Inside mule drivers,		23		1 35 to 1 90	156	
Dumpers	3		1 62 to 2 25		156	
Slate pickers	7	84	1 35	45c. to 90c.	156	
Mining overseers....	2		$100 & $80 pr mo.		365	
Breaker boss.........	1		75 "		365	
Stable boss	1		50 "		365	
Superintendent	1		125 "		365	
Clerk................	1		100 "		365	
Do..assistant......	1		60 "		365	
Dispatcher..........	1		50 "		365	

E. B. AYRES, *Cashier.*

BREAKER No. 19.

Lehigh and Wilkesbarre Coal Company, Wanamie, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 68,266 tons; $136,532.

Whole number of persons employed: 282.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	78				158 ds.	
Miners on wages....	17		$2 25		158 "	
Outside laborers.....	32	3	1 50	$1 50	158 "	
Inside laborers.......	67	13	$2 00 to 2 10	85c to 1 80	158 "	
Outside mechanics...	5		2 25		300 "	
Inside mule drivers..		13		$1 25 to 2 00	158 "	
Dumpers.............	2		1 62 to 2 25		158 "	
Slate pickers		49		45c to 90c	158 "	
Mining overseer.....	1		100 per mo.		365 "	
Breaker boss.........	1		75 "		365 "	
Stable boss...........	1		$1 60		365 "	

E. B. AYRES, *Cashier.*

LUZERNE COUNTY.

COUNCIL RIDGE COLLIERY.

J. Leisenring & Co.

Quantity of tons and value in dollars of annual product: 76,453 tons; balance at Mauch Chunk; $202,218 18.

Whole number of persons employed: 394.

CLASSIFICATION.	No. of men......	No. of boys	Daily wages paid men...........	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract...	79	......	$2 85	....	123 days.	
Miners on wages	25	......	2 21	....	....	
Outside laborers.....	10	......	1 50	....	....	
Inside laborers	65	20	1 89	$1 00	....	
Outside mechanics...	9	.....	2 50	....	....	
Inside mechanics....	12	......	2 50	....	....	
Outside mule drivers	2	5	1 80	1 35	....	
Inside mule drivers,	15	5	1 89	1 40	....	
Dumpers............	8	......	1 60	....	....	
Slate pickers.........	40	76	1 35	65	....	
Mining overseer.....	1	......	$125 per mo	....	....	
As't mining overseers	2	......	60 “	....	....	
Master mechanic....	1	......	100 “	....	....	
Firemen.............	6	......	65 “	....	....	
Hoisting engineers ..	6	......	65 “	....	....	
Pumping engineers..	5	......	60 “	....	....	
Ticket bosses........	2	......	65 “	....	....	

J. LEISENRING & CO.

Delaware and Hudson Canal Company, Providence, Pa.

Quantity of tons and value in dollars of annual product: $2,167,948\frac{16}{20}$ tons of 2,240 pounds; value, $2,922,527 88.

Whole number of persons employed: 5,835.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Miners on contract...	1,479	......	$2 00	......	About 10 mos.	
Miners on wages.....	114	......	1 94	....		
Outside laborers.....	121	......	1 50	....	....	
Inside laborers	1,362	......	1 65	....	....	
Outside mechanics ..	98	......	2 12	....	....	
Inside mechanics....	55	......	2 13	....	....	
Outside mule drivers	......	51	....	$ 73	....	
Inside mule drivers,	......	515	....	87	....	
Weigh master	30	......	1 58	....	....	
Dumpers	36	......	1 50	....	....	
Slate pickers	30	753	1 48	44	....	
Mining overseers....	24	......	4 00	....	....	
Civil engineers......	5	8	4 00	1 53	....	
Door boys—inside....	......	148	....	53	....	
Out. foremen, clerks and office men.....	43	......	2 50	....	....	
Miscellaneous labor,	963	......	1 30	....	....	

This report embraces the following collieries :

Racket Brook Breaker, Coal Brook, No. 1 Shaft, No. 3 Shaft, Powderly, White Oak, Grassy Island, Olyphant No. 1, Olyphant No. 2, Marvine Shaft, Legitt's Creek, Von Storch, Mill Creek, Pine Ridge, Laurel Run, Baltimore Slope, Baltimore Tunnel, Plymouth No. 1, Plymouth No. 2, Plymouth No. 3, Plymouth No. 4, Plymouth No. 5.

A. H. VANDLING, *Sup't Coal Dep't.*

GOWEN.

Roberts Run Coal Company, Gowen, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 27,807 tons; $55,614.

Whole number of persons employed : 92.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	33	......	$6 00 per yd.	....	300 dys.	
Miners on wages.....	3	......	$2 00	....	....	
Outside laborers.....	7	......	1 33	....	....	
Inside laborers	13	4	1 83	66	....	
Outside mechanics ..	2	......	1 75	....	....	
Outside mule drivers	2	......	1 33	....	....	
Inside mule drivers,	......	4	....	$1 25	....	
Dumpers	2	......	1 33	....	....	
Slate pickers	......	17	....	50	....	
Mining overseer.....	1	......	100 per mo.	....	....	
Engineers............	2	......	$2 25	....	....	
Firemen.............	2	......	1 66	....	....	

This colliery is situated 12 miles west of Hazelton, in Luzerne county, on the estate of Roberts Coal Company, and operated by the Roberts Run Coal Company.

Description.—Slope No. 1, sunk on the north dip of ——— vein, a distance of 240 feet, at an angle of about 55°. The west gangway has been driven 2,595 feet, with 7 breasts working. There are 5,730 feet of T iron track in and about the mines, and 26 mine cars. The drift has been driven west 1,800 feet, including two tunnels, one of 165 and the other 72 feet. These veins have not been definitely named, but suppose them to be the Wharton or Buck Mountain. They ship about 150 tons of coal per day, with a breaker capacity of 450 tons per day.

Ventilation.—This is produced by a furnace located on top of the outlet, which gives very unsatisfactory results, owing to the furnace being placed so far off from where the power of rarefaction is required. The air is conducted down the slope, thence along the main gangway to the first breast opened next to the face of the gangway, thence back through the cross-cuts to the up-cast. This mine generates gas. This mode of ventilation does very well where the vein will not admit of an air-way being driven. But the great trouble encountered is in keeping the shutes air-tight to force the air to the face of the gangway, which is a matter of impossibility, as the shute must be opened while the laborer loads his car. If an air-way can possibly be driven parallel with the main gangway, it is preferable to do so. The air has been measured and reported according to law, 6,720 cubic feet at inlet, 7,300 cubic feet at outlet. Men employed, 34.

Machinery.—They use one hoisting engine of 60-horse power, 1 breaker engine of 30-horse power, with 5 boilers—reported safe and in good condition. They have no metal speaking tube, and have no brake on the hoisting drum. They do not allow men to ride on the slope. They have competent and sober engineers, seem to have a competent and practical mining boss, have steam gauges on their boilers, and have reported all serious accidents. Powder used, 550 kegs; the vein is about 10 feet thick, coal good.*

Lewis Rothermal, general superintendent; Alex. Witchey, mine agent.

ROBERTS RUN COAL CO.
Per R.

SPRING MOUNTAIN.

J. C. Haydon & Co., Jeanesville, Pa.
Quantity of tons of annual product: Last year, 174,815¾ tons.
Whole number of persons employed: 588 men and boys.

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* From Mine Inspector's Report.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	128	......	$3 90	....	136	A strike took place January 1, 1875, and continued till July 9, 1875, the men giving in at last to reduction of wages.
Miners on wages.....	5	......	2 85	....	145	
Outside laborers.....	75	......	1 50	....	150	
Inside laborers......	147	......	1 90	....	136	
Outside mechanics...	15	......	2 50	....	295	
Inside mechanics....	6	......	2 75	....	270	
Outside mule drivers	......	8	....	$1 10	136	
Inside mule driver,	15	30	2 00	1 65	136	
Slate pickers.........	21	110	1 25	75	136	
Mining overseers....	5	......	3 00	....	310	
Teamsters...........	3	......	1 80	....	310	
Hoisting engineers..	8	......	2 50	....	365	
Firemen............	12	......	2 00	....	365	

Characteristics of Colliery.—We are working the Mammoth and Wharton veins in the middle coal field, the former is 28 feet thick, the latter 9 feet, white ash coal. The land belongs to the Spring Mountain Coal Company, comprising about 800 acres, situated in Luzerne and Carbon counties, the line running through the property.

J. C. HAYDEN & CO.,
Spring Mountain Collieries.

HARLEIGH.

George P. Nevin, Agent, 13 Kilby street, Boston, Mass.

Quantity in tons and value in dollars of annual product: $85,435\frac{15}{20}$ tons; $273,394 40.

Whole number of persons employed: 368.

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Miners on contract...	64	....	$3 05	....	108¼ dys.	No work for 6 months on account of a strike.
Miners—laborers	99	....	2 07	....	108¼ “	
Outside laborers.....	16	....	1 50	....	156 “	
Inside laborers......	18	....	2 07	....	196 “	
Outside mechanics..	10	....	2 67	....	220 “	
Outside mule drivers	......	4	....	$1 00	108¼ “	
Inside mule drivers,	25	....	2 00	....	108¼ “	
Dumpers	12	....	1 60	....	108¼ “	
Slate pickers....	24	72	1 34	50c to 90c	108¼ “	
Mining overseers....	4 4	....	2 07 3 04	....	Full.	
Engineers	8	2	$75 per m.	$50 per m.	“	
Firemen	5	....	65 “	....	“	

Characteristics of colliery—Situated two miles north of Hazleton, on the estate of the Big Black Creek Improvement Company, and operated by the Harleigh Coal Company. It consists of 2 slopes and 2 breakers, and one slope kept for pumping.

Slope No. 1.—Sunk on the south dip of the Mammoth or E vein, a distance of 461 feet; elevation at top of slope above mid-tide 1,518 feet, at bottom 1,363 feet, thickness of vein 27 feet. In the south-east gangway there is an inside slope of about 240 feet in length, driven across the pitch, and the coal is hoisted to a level or bottom of the slope proper; shutes have been put in for the purpose of working the coal left in the upper gangway. The shutes extend from the bottom of the subterranean slope to the upper gangway. A great deal of coal from the old workings can be thus mined, and the company remunerated for their investments.

Ventilation is produced by the exhaust steam from the pump, and from the heat of the steam pipes which affords the power of rarefication. Slope No. 2, which is now kept for pumping, is the intake and the slope being the outlet. The air has been measured and reported according to law, 1,000 cubic feet at face of gangway, at outlet 25,000 cubic feet per minute; men employed, 68.

Machinery.—Two hoisting engines of 74-horse power, one breaker engine of 24-horse power, five pumping engines of 120-horse power; total number of engines five, of 218-horse power. Have twenty-six steam boilers, reported safe and in good condition. There is a brake attached to the hoisting drum, and a car with bridle-chains expressly made for the men to ride up and down the slope. They have a practical mining boss; boys are not allowed to work inside under 12 years of age, and they do not allow any person to ride on loaded cars. The parties in charge understand their duty in case of serious accident to persons. Powder used, 690 kegs; capacity of breaker, 450 tons per day.*

Slope No. 2 has been worked out, and is now used for pumping.

Slope No. 3.—Sunk on the same vein and on the same dip, a distance of 708 feet, vertical 297 feet, average thickness 27 feet. The top of the slope is 1,521 feet above mid-tide, at the bottom of the same 1,224 feet. A gangway is now being driven eastward under the slope in order to mine coal which could not be worked heretofore.

Ventilation.—This is effected by the exhaust from the pump, 11,000 cubic feet of air per minute at face of gangway, and 25,000 cubic feet per minute at outlet; men employed, 108; air good.

Machinery.—Use 3 hoisting engines of 128-horse power, 1 breaker engine of 24-horse power, and 2 steam pumps, (Allison's,) total number of engines 4, aggregate horse power 152.

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* From Mine Inspector's Report.

James H. M'Kee, general superintendent; John Lloyd, mine boss; William Silver, outside foreman.

HARLEIGH COAL CO.,
G. P. Nevin, Agent.

WARRIOR RUN.

A. J. Davis & Co., Wilkesbarre.

Quantity of tons and value in dollars of annual product: 35,000 tons; $80,000.

Whole number of persons employed: 195.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	50		$2 40		6 mos.	
Miners on wages	10		2 25			
Outside laborers	49		1 50			
Inside laborers	42		2 05			
Outside mechanics	12		2 25			
Inside mechanic	1		2 25			
Outside mule drivers,	3	2		$1 50		
Inside mule drivers	3	2		1 50		
Dumpers	2					
Slate pickers	22	20		1 00		
Mining overseers	1		4 00			

A. J. DAVIS.

EAST BOSTON.

William G. Payne & Co.

Quantity in tons and value in dollars of annual product: 60,831 tons; $121,662.

Whole number of persons employed: 193.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	60				About 7 mos.	
Outside laborers	10		$1 50			
Inside laborers	50		2 00			
Outside mechanics	4		2 25			
Inside mechanics	4		2 25			
Outside mule drivers	2		1 25			
Inside mule drivers,	20		1 30			
Weigh master	1		2 50			
Slate pickers	40		70			
Mining overseers	2		5 00			

W. G. PAYNE & CO.

COLERAINE COLLIERY.

W. T. Carter & Co., 103 Walnut street, Philadelphia.

Quantity of tons and value in dollars of annual product: 92,689.06 tons; $220,124 15.

Whole number of persons employed: 273.

CLASSIFICATION.	No. of men.....	No. of boys	Daily wages paid men	Daily wages paid men..........	Time in operation during year....	REMARKS.
Miners on contract...	85				139 dys.	From $60 to $100 per mo.
Outside laborers.....	24		$1 50			
Inside laborers......	80		1 80			
Outside mechanics ..	11		2 50			
Inside mechanic.....	1		2 62			
Outside mule drivers,		5	1 00			
Inside mule drivers,	7	11	1 75			
Slate pickers.........	4	40				From 50c. to $1 per day.
Mining overseer.....	3		2 50			
Civil engineer........	1	when we want him.				Paid for the time he works.
Outside bosses.......	2		2 50			

W. T. CARTER & CO.

HOLLENBACK.

Robert S. Poole, Pittston.

Quantity of tons and value in dollars of annual product: 25,403 tons; $49,556 00.

Whole number of persons employed: 82.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid paid	Daily wages paid boys........ :	Time in operation during year....	REMARKS.
Miners on contract ..	16		$3 25 aver.		160 dys.	The average number of men employed steady is as enumerated, yet as many as 100 hands are at work part of the time. Suspension of four months, from Feb. 28 to June 24, inclusive, owing to the miners striking against the ten per cent. reduction.
Outside laborers.....	4		$1 50		"	
Inside laborers......	18		2 50		"	
Outside mechanics ..	4		2 25		240 dys.	
Inside mechanics....	2		2 25		"	
Outside mule drivers	1	1	1 50	$1 00	160 dys.	
Inside mule drivers,	1	7	1 60	1 47	170 dys.	
Weigh master	1		2 25		160 dys.	
Dumper.............	1		1 60		"	
Slate pickers.........	20	4	1 50	55	"	
Mining overseer.....	1		3 00		313 dys.	
Outside foreman.....	1		2 50		"	

Characteristics of Colliery.—This colliery, Hollenback, is situated in Plains township, Luzerne county, owned by J. Welles Hollenback, and leased by R. S. Poole.

The vein is called the Hillman or Primrose vein, is pure, free from slate, and considered a first class coal for steam purposes and domestic use.

The coal is mined by means of a slope, and the coal lays on an average angle of dip of 10 degrees.

Engines employed at the colliery: 1 breaker engine, 20-horse; 1 hoisting engine, 30-horse; 1 hoisting engine, 20-horse; 2 donkey pumps.

R. S. POOLE.

UPPER LEHIGH.

Upper Lehigh Coal Company, P. O., Upper Lehigh, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: $133,101\frac{9}{20}$ tons; value, $314,119 42.

Whole number of persons employed: 498.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	113		$2 75		142 dys.	
Miners on wages	28		2 22			
Outside laborers	86		1 50			
Inside laborers	69		1 90			
Outside mechanics	16		2 40			
Inside mechanics	3		2 25			
Outside mule drivers,	4	4	1 75	$1 15		
Inside mule drivers,	17	6	1 90	1 25		
Dumpers and loaders	14		1 60			
Slate pickers	39	66	1 40	55		
Mining overseers	3		4 00			
Civil engineers	2		4 00			
Hatches & door tenders		20		65		
Clerks	8		3 00			

UPPER LEHIGH COAL CO.,
Per SAMUEL B. PRICE, *Chief Clerk.*

HUMBOLDT.

Linderman, Skeer & Co., Hazleton, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 40,597.02 tons; value, $103,586 90 at mines.

Whole number of persons employed: 190.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	*49	......	....	....	136	*Average wages $2 50 per day, net.
Miners on wages.....	5	......	$2 17	....	310	
Outside laborers.....	10	6	1 50	$ 83	290	
Inside laborers......	†36	3	1 96	1 34	136	†The men laborers are paid by the miners on contract.
Outside mechanics...	5	2	2 25	1 83	300	
Outside mule drivers	......	2	....	1 34	136	
Inside mule drivers,	......	8	....	1 81	136	
Dumpers	......	1	....	1 34	136	
Slate pickers.........	15	36	1 37	55	136	
Mining overseers....	1	......	3 00	....	183	
Civil engineer & superintendent......	1	......	3 00	....	183	
Engineers....	4	......	2 33	....	365	
Firemen.......	4	......	1 80	....	365	
Ticket boss..........	1	......	2 33	....	312	
Screen boss..........	1	......	2 33	....	214	

LINDERMAN, SKEER & CO.,
Bethlehem, Pa.

EAST SUGAR LOAF COLLIERY.

Linderman, Skeer & Co., Stockton, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 113,960$\frac{19}{20}$ tons; value at the mines, $311,406 78.

Whole number of persons employed: 465.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract...	140	......	$2 88	....	130 dys.	
Miners on wages.....	20	......	2 12	....	....	
Outside laborers.....	80	......	1 50	....	....	
Inside laborers......	90	......	1 90	....	....	
Outside mechanics ..	12	......	2 50	....	....	
Outside mule drivers	8	......	....	$1 00	....	
Inside mule drivers,	20	......	....	1 50	....	
Slate pickers.........	80	......	....	55	....	
Mining overseers....	3	......	3 00	....	313 dys.	
Engineers	12	......	2 16	....	365 "	

WILLIAM AINY, *Super't.*,
Main office, Bethlehem, Pa.

STOCKTON OR EAST SUGAR LOAF COLLIERIES.

Situated on the estate of Smith, Roberts & Packer, and partly on the estate of Tench Coxe, and operated by Linderman, Skeer & Co.

Slope No. 2.—Sunk on the south dip of the Mammoth or E vein, a distance of 1,450 feet, at an angle of about 34°, perpendicular depth of slope 803 feet. The top of the slope is 1,584 feet above mean-tide, and at the bottom of the same 781 feet. The east gangway has been driven 1,853 feet, and the west gangway 875 feet. The workings of this slope connects with No. 1, and No. 1 connects by an inside slope with No. 5.

Slope No, 3.—Sunk on the estate of Hon. Tench Coxe a distance of 1,096 feet on the Mammoth or E vein, at an angle of about 17°. The top of the slope is 1,578 feet above tide, and at the bottom of the same 1,262 feet, perpendicular depth 316 feet. This slope is now kept for pumping, the coal being worked out.

Slope No. 4—Sunk on the north dip of the same vein, a distance of 461 feet, at an angle of about 33¼°, perpendicular depth of slope 261 feet, height above tide at top of slope 1,545 feet, at bottom 1,284 feet. The east gangway has been driven 1,250 feet, with 15 breasts worked. The bottom lift has been worked out, and a counter gangway has been driven to work the crop coal. The coal from this slope is prepared at No. 5 slope breaker. Ventilation 6,872 cubic feet; men employed, 29.

Slope No. 5.—Sunk to the basin on the north dip of Mammoth or E vein, a distance of 642 feet, at an angle of about 34¼°, perpendicular depth of slope 359 feet, elevation above tide at top of slope 1,549 feet, at bottom 1,190 feet. The east gangway has been driven 1,800 feet, with 6 breasts working. The west gangway has been driven a considerable distance, with numerous breasts. There are two balance planes in this slope for letting the coal from the counter gangways to the level of No. 5 slope west gangway. By these counter gangways they are able to work the coal left by the proper gangway, owing to the range becoming too long for the miner to carry his lumber up the pitch so great a distance, and sometimes due to other causes, such as the top rock falling before the breast is half way up, &c.

Ventilation.—This is produced by a 16 feet diameter fan, assisted by the exhaust steam from the pumping engine, ventilation 9,760 cubic feet at face of gangway, at outlet 18,920 cubic feet; men employed, 84.

Slope No. 7.—Sunk on the south dip of the Mammoth or E vein, a distance of 560 feet, at an angle of about 33¼°, height above meantide at top of slope, 1,551 feet, and at the bottom 1,249 feet, perpendicular depth of slope 302 feet. The west gangway has been driven 1,400 feet, with 18 breasts opened. The east gangway has been driven 1,200 feet, with 12 breasts opened. These breasts are opened at right angles with the gangway.

Slope No. 8, is a new slope sinking on the north dip of the Mammoth or E vein. A new breaker will be built to prepare the coal from this slope. There are 65,918 feet of T iron track in and about all the mines, with 88 mine cars, and a breaker capacity of 1,900 tons of coal per day.

Ventilation.—This is produced by a 7-feet diameter fan at slope No. 7. There are good airways driven parallel with the gangway. The breasts are not very satisfactory ventilated, owing to the one man-way system of mining.

Machinery.—Use 7 hoisting engines of 340 horse power, 3 breaker engines of 60-horse power, 3 pumping engines of 180-horse power, 2 fan engines of 25-horse power; total number of engines, 15; aggregate horse power, 605.

HILLMAN'S.

H. Baker Hillman, Wilkesbarre, Pa.

Quantity in tons of value in dollars of annual product: 36,000 tons; value, $60,000.

Whole number of persons employed: About 100.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys.......	Time in operation during year....	REMARKS.
Miners on contract...	25	......	$2 25	....	About 8 mos.	
Miners on wages.....	4	......	2 25	....		
Outside laborers.....	8	......	1 50	....	....	
Inside laborer.......	25	......	2 00	....	....	
Outside mechanics...	2	......	2 25	....	....	
Inside mechanics....	2	......	....	....	....	
Outside mule driver,	1	......	1 50	....	....	
Inside mule drivers,	6	......	1 40	....	....	
Slate pickers	......	10	....	$ 60	....	
Mining overseer.....	1	......	....	....	....	
Civil engineer.......	1	......	....	....	....	

H. BAKER HILLMAN.

CROSS CREEK COLLIERY.

Coxe Bros. & Co., Jeddo, Penn'a.

Quantity of tons and value in dollars of annual product: $75{,}070\frac{2}{20}$ tons $166,583 72.

Whole number of persons employed: 287.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	76	....	$2 90	....	122 dys.	
Miners on wages.....	2	....	2 21	....	....	
Outside laborers.....	38	....	1 55	....	....	
Inside laborers.......	40	....	1 90	....	....	
Outside mechanics ..	20	....	2 36	....	....	
Inside mechanic.....	1	....	2 33	....	....	
Outside mule drivers	8	....	1 75	....	....	
Inside mule drivers,	9	13	2 35	$1 14	....	
Dumper.............	1	....	1 60	....	....	
Slate pickers.........	16	43	1 37½	0 61	....	
Mining overseer.....	1	....	4 81	....	....	
Civil engineers......	4	....	2 50	....	....	
Sup't, clerks, book-keepers, bosses, &c.	15	....	2 60	....	....	

COXE, BROS. & CO.

WOODSIDE COLLIERY.

Owned by Jeddo Coal Company.

Coxe Bros. & Co., Jeddo, Pa.

Quantity of tons and value in dollars of annual product: 24,352.01 tons. $57,168 73.

Whole number of persons employed: 103.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract ..	27	......	$2 86	....	116¼ dys	
Miners on wages.....	10	......	2 21	....	....	
Outside laborers.....	8	......	1 55	....	....	
Inside laborer........	20	......	1 90	....	....	
Outside mechanics ..	3	......	2 42	....	....	
Inside mule drivers,	5	5	2 39	$1 00	....	
Dumpers	1	......	1 60	....	....	
Slate pickers........	7	13	1 37½	60	....	
Mining overseers....	1	......	4 81	....	....	
Bosses............ Watchman........	3	......	2 04	....	....	

COXE BROS. & CO.

SALEM.

Salem Coal Company, Shickshinny, Pa.

Quantity of tons and value in dollars of annual product: 50,130 tons; $125,172 46

Whole number of persons employed: 170.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	47		$2 25		265 dys.	
Outside laborers.....	12		1 50			
Inside laborers......	41		1 80			
Outside mechanics...	2		2 25			
Inside mechanics....	2		2 25			
Outside mule drivers	3		1 50			
Inside mule drivers,	9		1 60			
Weigh master.......	1					
Dumper.............	1		2 00			
Slate pickers........	50		0 75			
Mining overseer.....	1		4 00			
Civil engineers......	1					

Characteristics of Colliery.—White and red ash.

SALEM COAL CO.

BREAKER No. 1.

Tunnel No. 1, Slope No. 1.

Susquehanna Coal Company, Wilkesbarre, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 111,606 tons; $2,232 12.

Whole number of persons employed: 560.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys......	Time in operation during year....	REMARKS.
Miners on contract..	96		$3 00		147½ dys.	On account of suspension this colliery only worked six months or 147½ days in 1875.
Miners on wages.....	4		2 25			
Outside laborers.....	85		1 40			
Inside laborers......	180		2 03			
Outside mechanics..	25		2 25			
Inside mechanics....	8		2 25			
Outside mule drivers		6		$1 10		
Inside mule drivers,		31		1 20		
Dumpers............	4		1 40			
Slate pickers........	20	66	1 00	0 60		
Mining overseers....	2		$100 per mo.			
Civil engineers......	2		2 50			
Mach. engineers.....	6		2 25			
Blacksmiths.........	4		2 50			
Clerks..............	5		$50 per mo.	and up.		
Bosses..............	4		90 per mo.	and up.		
Teamsters...........	10		1 53			
Docking bosses......	2		2 25			

JNO. STICKNEY, *Gen'l Supt.*

BREAKER No. 2.

Tunnel No. 2, Tunnel No. 4, Slope No. 2 and Honey Pot.

Susquehanna Coal Company, Wilkesbarre, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 172,361 tons; value, $344,722.

Whole number of persons employed: 600.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	REMARKS.
Miners on contract..	170		$3 00		148 dys.	On account of suspension this colliery only worked six months or 148 days in 1875.
Miners on wages.....	4		2 25			
Outside laborer......	40		1 40			
Inside laborers......	190		2 03			
Outside mechanics..	4		2 25			
Inside mechanics....	6		2 25			
Outside mule driver,	2	8	1 40	$1 10		
Inside mule drivers,		40		1 20		
Dumpers...........	4		1 60			
Slate pickers........	30	100	1 00	60		
Mining overseers....	2		100 00	per mo.		

JNO. STICKNEY,
General Supt.

SUSQUEHANNA COAL COMPANY No. 3.

Susquehanna Coal Company, Wilkesbarre, Pa.

Quantity of tons and value in dollars of annual product: 88,098 tons; value, $176,196.

Whole number of persons employed: 490.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	107		$3 19		143¾ dys	
Miners on wages.....	10		2 25			
Outside laborers.....	41		1 40			
Inside laborers......	25		1 83			
Outside mechanics..	15		2 25			
Inside mechanics....	8		2 25			
Outside mule drivers		2		$1 10		
Inside mule drivers,		18		1 17		
Weigh master.......	1		1 75			
Dumpers............	4		1 58			
Slate pickers........	60	112	1 20	72		
Mining overseers....	3					$100 per month.
Door boys...........		14		77		
Miners' laborers.....	70		1 83			

JNO. STICKNEY,
General Supt.

BEAVER MINES.

Waterman & Beaver, Danville, Pa.

Quantity of tons and value in dollars of annual product: 18,266 tons; $32,000.

Whole number of persons employed: 31.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	9		$81 00*		6 mos.	
Miners on wages						
Outside laborers	5		1 75			
Inside laborers						
Outside mechanics	2		2 25			
Inside mechanics						
Outside mule drivers	5		1 10			
Inside mule drivers,						
Weigh master	1		2 25			
Slate pickers		6		$0 56		
Foremen	2		2 50			
Door boy		1		0 68		

*Average per month.

WATERMAN & BEAVER.

KINGSTON MINES.

Located in Luzerne county.

Waterman and Beaver, Danville, Pa.

Quantity of tons and value in dollars of annual product: 234,247 tons; $468,500.

Whole number of persons employed: 611.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	167				7 mos.	Average $78 per month.
Miners on wages						
Outside laborers	127		$1 50			
Inside laborers						
Outside mechanics	26		2 10			
Inside mechanics						
Outside mule driver,	63		1 50			
Inside mule drivers,						
Weigh masters and clerks	4		2 25			
Slate pickers	80	87	1 03	$ 60		
Foremen	10		3 00			
Door boys		47		68		

WATERMAN & BEAVER.

HIGHLAND No. 1.

G. B. Markle & Co., Jeddo, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 56,211.09 tons; $112,422.

Whole number of persons employed: about 140.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	65	....	$3 17	....	5½ mos.	
Outside laborers.....	12	....	1 50	$1 25	....	
Inside laborers.	9	2	1 93	1 52	....	
Outside mechanics..	6	1	2 25	1 30	....	
Inside mechanics....	2	1	2 25	....	....	
Outside mule driver,	......	1	....	1 25	....	
Inside mule drivers,	6	4	1 90	1 50	....	
Dumper	1	....	1 60	....	....	
Slate pickers	15	16	1 33	0 55	....	
Mining overseer.....	1	....	3 00	....	....	

G. B. MARKLE & CO.
Per F. Hammann.

OAK DALE No. 2.

G. B. Markle & Co., Jeddo, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 60,102.16 tons; $120,204 32.

Whole number of persons employed: 173.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Miners on contract...	70	....	$2 73	....	5½ mos.	
Outside laborers... .	16	6	1 50	$1 25	....	
Inside laborers......	5	....	1 93	....	....	
Outside mechanics...	9	1	2 25	1 30	....	
Inside mechanics....	2	....	2 25	....	....	
Outside mule drivers	......	2	....	1 25	....	
Inside mule drivers,	8	7	1 90	1 50	....	
Dumper	1	....	1 60	....	....	
Slate pickers.........	15	30	1 33	0 65	....	
Mining overseer.....	1	....	3 00	....	....	

G. B. MARKEL & CO.,
Per F. Hammann.

OAK DALE No. 1.

G. B. Markle & Co., Jeddo, Luzerne county, Pa.

Quantity of tons and value in dollars of annual product: 62,114.02 tons; $124,228.

Whole number of persons employed, 162.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract...	73	....	$2 66	....	5½ mos.	
Outside laborers.....	10	5	1 50	$1 25	....	
Inside laborers......	8	4	1 93	1 52	....	
Outside mechanics...	6	1	2 25	1 30	....	
Inside mechanics....	4	....	2 25	....	....	
Outside mule drivers	......	2	....	1 25	....	
Inside mule drivers,	6	5	1 90	1 50	....	
Dumper	1	....	1 60	....	....	
Slate pickers.........	16	20	1 33	0 65	....	
Mining overseer.....	1	....	3 00	....	....	

G. B. MARKLE & CO.,
Per F. Hammann.

LATTIMER COLLIERY, No. 1 AND No. 2.

Pardee, Bro. & Co., Hazleton, Pa.

Quantity of tons and value in dollars of annual product: 129,000 tons, $2 per ton, $258,000.

Whole number of persons employed: 369.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Miners on contract ..	95	....	....	....	6 mos.	
Outside laborers.....	9	....	$1 67	....	....	
Inside laborers......	35	....	2 00	....	....	
Outside mechanics...	6	....	2 25	....	....	
Inside mechanics....	5	....	2 25	....	....	
Outside mule drivers,	6	....	1 50	....	....	
Inside mule drivers.	13	....	1 75	....	....	
Dumpers	4	....	1 60	....	....	
Slate pickers.........	125	65	1 35	$0 50	....	
Mining overseers ...	2	....	3 25	....	....	
Outside bosses.......	2	....	2 50	....	....	
Breaker bosses	2	....	2 00	....	....	

PARDEE, BRO. & CO.

HOLLYWOOD.

Calvin, Pardee & Co., Hazleton P. O., Penn'a.

Quantity of tons and value in dollars of annual product: $53,741\frac{18}{20}$ tons; Value at mines, $107,483 80.

Whole number of persons employed: 147.

In the classification made below, the number of each class employed:

Miners on contract, 34; miners on wages, 4; outside laborers, 21; inside laborers, 30; outside mechanics, 8; outside mule drivers, 3; inside mule drivers, 4; dumpers, 2; slate pickers, 16 men, 20 boys; mining overseer, 1; civil engineers, 4. Time in operation during year, 128 days.

Remarks.—The wages paid to inside hands varied nearly every month with the advance or decline of coal, and as a consequence it is a difficult matter to state wages paid or earnings, and we will not, therefore, attempt it.

CALVIN, PARDEE & CO.

COLLIERIES.

Hazleton Mines, Laurel Hill Mines, Slope No. 3 Mines, Sugar Loaf Mines, South Sugar Loaf Mines, Cranberry Mines and East Crystal Ridge Mines.

A. Pardee & Co., Hazleton.

Quantity of tons and value in dollars of annual product: Sent to market $270,824\frac{18}{20}$ tons; value at mines, $541,648.

Whole number of persons employed: 1,134.

Miners on contract and miners on wages, 291; outside laborers, 191 men, 252 boys; inside laborers, 172 men, 14 boys; outside mechanics, 39; inside mechanics, 20; outside mule drivers, 14; inside mule drivers, 32 men, 32 boys; Mining overseers, 9; outside bosses, engineer, firemen, clerks and employees at steam grist mill, 68.

The least number of days worked at our collieries in the year 1875 was $94\frac{6}{10}$ days, and the greatest number of days worked was $136\frac{4}{10}$.

All our *inside the mines* employees were paid for contract work and day wages, prices varying with the price of coal at tide water, and as there was so much fluctuation in price of coal we are unable to give an average rate of wages paid. Outside the mines wages also vary so much that we deem it useless to attempt to give rates paid.

A. PARDEE & CO.,
per C. PARDEE, *Supt.*

DIAMOND No. 1.

Lehigh and Wilkesbarre Coal Company.

Quantity of tons and value in dollars of annual product: 198,931 tons; $397,962.

Whole number of persons employed: 855.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Miners on contract	126				131 dys.	
Miners on wages	45		$2 25			
Outside laborers	95		1 50			
Inside laborers	320	55	$1 90 to 2 25	$0 85		
Outside mechanics	10		2 25			
Inside mechanics	15		2 25			
Outside mule drivers,	6		1 50			
Inside mule drivers,	45		1 70			
Dumpers	13		1 50			
Slate pickers		103		55c to $1 00		
Mining overseers	2		$100 per mo.			
Hoisting engineers	11		2 32			
Firemen	6		1 80			
Colliery foreman	1		$75 per mo.			
Fire bosses	2		85 per mo.			

E. B. AYRES, *Cashier.*

NOTE.—This should have been printed on page 425, following breaker No. 19.

A.—ANTHRACITE COAL—WAGES.

POST OFFICE, PHILADELPHIA.

NAME OF COLLIERY.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers—men	Inside laborers—boys	Outside mechanics—men	Outside mechanics—boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers—men	Inside mule drivers—boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers
Philad'a and Reading Coal and Iron Co—																
Buckville	$1 76 to 5 76	$2 07	$1 33 to 1 67	$1 17	$1 77 to 2 07	$ 77 to 85	$1 38 to 2 50	....	$1 83	$ 67 to 1 17	$1 77	$ 77 to 1 14	$1 50	....	$ 50 to 1 00	$2 31 to 4 48
North Franklin No. 1	2 15 to 5 07	2 00	1 35 to 1 96	....	1 70 to 1 87	94 to 1 14	1 50 to 2 33	....	1 35 to 2 12	1 00	1 70 to 2 00	....	1 50	....	46 to 1 08	3 56 to 3 85
North Franklin No. 2	1 44 to 3 01	2 00	1 35 to 1 58	1 00 to 1 08	1 70 to 2 00	1 00	2 50	$1 25	1 35 to 2 12	1 00	1 28 to 2 04	92 to 1 10	1 50 to 1 80	....	33 to 92	3 08 to 3 64
North Mahanoy	1 14 to 3 52	1 99 to 2 04	1 50 to 2 00	79	1 53 to 2 34	59	1 85 to 2 33	1 12	1 83	1 05	1 36 to 1 88	94	1 67	$1 33	42 to 79	3 08 to 3 48
Otto	1 78 to 4 46	2 07 to 2 21	1 35 to 1 95	75 to 1 00	1 43 to 1 94	92	1 92 to 2 32	....	1 83	75 to 1 17	1 77	1 10	1 50	....	46 to 1 08	2 31 to 4 63
Mt. Carmel Shaft	1 43 to 4 47	2 07 to 2 38	1 50 to 1 75	1 00 to 1 17	1 36 to 1 94	77 to 1 19	1 73 to 2 50	....	1 50 to 1 73	....	1 28 to 1 77	1 19	1 50	1 25	43 to 83	2 31 to 4 31
Oak Dale	1 21 to 4 60	2 07	1 25 to 1 67	67 to 1 08	1 77 to 2 07	77 to 1 19	2 00 to 3 08	....	....	83 to 1 08	1 87 to 2 07	85 to 1 19	1 50	1 33	37 to 1 17	2 31 to 4 00
Phœnix Park No. 2	1 61 to 3 78	1 99	1 50 to 1 83	75 to 1 10	1 53 to 1 84	81 to 1 15	1 65 to 3 00	....	1 50 to 1 57	75 to 83	1 10 to 1 84	....	2 00	....	33 to 79	2 31 to 3 85
Potts Colliery	2 54 to 4 86	2 14	1 21 to 1 83	75	1 87 to 2 27	98	2 50	1 35	1 25 to 1 83	50 to 83	1 84 to 2 04	1 14 to 1 23	1 50	1 21 to 1 35	33 to 1 08	2 69 to 4 50
Plank Ridge	1 84 to 5 31	1 92 to 2 32	1 25 to 1 67	87	1 68 to 2 14	77 to 88	1 67 to 2 33	....	1 83	87 to 1 12	1 28 to 1 87	1 19	1 35 to 1 67	....	33 to 1 17	2 78 to 3 46
Pine Forest	1 57 to 3 62	2 07	1 42 to 1 67	....	1 77 to 2 07	81 to 94	1 95 to 2 50	....	1 42 to 1 83	83	1 23 to 2 07	93 to 1 02	1 67	....	42 to 2 67	2 31 to 4 33
Preston No. 2	1 67 to 4 16	2 07	1 29 to 1 83	....	1 47 to 1 94	85 to 1 02	1 50 to 2 50	....	1 83	1 08 to 1 17	1 45 to 1 92	1 23	1 58	1 29	42 to 1 17	2 31 to 4 63

Preston Nos. 3 and 4	1 66 to 5 52	2 07 to 2 21	1 33 to 1 83	1 17	1 53 to 2 16	85	1 95 to 2 50	....	1 83	1 08 to 1 17	1 45 to 2 04	....	1 17	1 25 to 1 50	50 to 1 00	2 31 to 4 63
Preston No. 1	1 41 to 4 85	2 00 to 2 07	1 29 to 2 12	1 16	1 77 to 1 92	85	1 50 to 2 50	....	1 25 to 1 83	1 17	1 36 to 1 53	1 10	1 33	1 29	46 to 1 08	3 12 to 4 54
Richardson Colliery	1 86 to 4 18	2 07	1 50 to 1 67	....	1 77 to 2 07	85	1 75 to 2 50	....	1 83	1 04	1 77	1 10 to 1 19	....	....	37 to 1 17	2 31 to 4 08
Tunnel	2 04 to 5 24	2 14 to 2 38	1 33 to 1 83	1 08	1 87 to 2 28	94 to 1 19	1 80 to 2 50	....	1 33 to 1 83	67	1 33 to 2 04	1 10 to 1 42	1 50	1 21 to 1 33	50 to 1 04	2 69 to 4 63
West Shenandoah	1 49 to 5 99	2 07	1 50 to 1 67	67 to 1 17	1 28 to 2 17	85	2 33	1 33	1 83	1 04	1 28 to 2 07	......	1 50	....	42 to 1 17	3 08 to 3 84
West Brookside	1 09 to 4 78	2 07 to 2 47	1 33 to 1 67	75	1 53 to 2 07	77	2 17 to 2 33	1 17	1 25 to 1 83	83	1 24 to 1 94	94 1 15	1 58	1 33	42 to 96	2 69 to 3 46
Thomaston	1 68 to 6 04	2 07	1 37 to 1 80	92 to 1 00	1 77 to 2 07	77 to 85	1 50 to 2 50	....	1 67 to 1 50	54 to 1 17	1 28 to 1 77	69 to 1 02	1 50	1 21 to 1 42	46 to 1 17	2 31 to 3 85
Ellengowan	1 54 to 5 08	2 07	1 50 to 1 67	....	1 77 to 2 12	85	1 80 to 2 33	....	1 83	....	1 77	34	....	....	....	4 04
Ellengowan	1 35 to 5 44	2 07	1 50 to 1 95	....	1 77 to 2 07	85	2 33	....	1 67 to 1 83	88 to 1 17	1 77	....	1 70	....	37 to 1 17	3 08 to 3 46
Beechwood	1 54 to 4 92	2 07 2 07	1 53 to 1 96	58 to 93	1 92 to 1 77	85 to 1 19	1 79 to 2 50	....	1 33 to 1 83	75 to 1 00	1 32 to 2 07	1 14 to 1 10	1 50	1 33	46 to 83	2 69 to 4 33
Boston	1 95 to 4 06	2 07	1 50 to 1 95	....	1 68 to 2 27	1 06 to 1 19	1 50 to 2 33	1 05	1 33 to 1 83	90 to 1 05	3 53 to 1 76	....	....	1 30	37 to 1 17	3 23 to 4 00
Bast	2 28 to 4 65	2 14 to 2 30	1 21 to 1 95	....	1 28 to 2 23	92 to 1 00	1 95 to 2 50	1 00	1 21 to 1 83	....	1 36 to 1 96	....	1 50	1 33	46 to 1 08	2 69 to 4 56
Forestville	1 68 to 3 65	1 80 to 1 95	1 20 to 1 65	83 to 1 00	1 44 to 1 84	68 to 1 02	2 33	1 65	1 95 to 2 10	83 to 90	2 00	1 07	1 50 to 1 80	1 56	37 to 1 00	2 25 to 3 85
Eagle Hill Shaft	1 93 to 6 62	2 07 to 2 38	1 39 to 1 67	67 to 1 08	1 53 to 1 94	77 to 94	2 50	1 50	1 73	....	....	94 to 1 10	1 25	1 33	46 to 1 00	2 31 to 4 00
Anchor	1 77 to 3 33	1 99 to 2 07	1 50 to 1 83	90 to 1 08	1 77 to 2 04	85	1 20 to 2 50	....	1 83	90 to 1 17	1 28 to 1 87	1 19	1 50	1 20	50 to 1 00	2 31 to 3 85
Locust Run	2 03 to 4 33	2 07	1 25 to 1 83	....	1 77 to 2 17	77	1 50 to 2 50	1 12	1 50	92 to 1 17	1 28 to 2 04	85 to 1 08	1 33 to 1 50	1 29	37 to 1 17	2 31 to 4 33
Mahanoy City	1 55 to 4 28	1 99 to 2 16	1 33 to 1 75	1 00	1 17 to 2 46	85 to 1 10	1 83 to 2 50	....	1 80	1 11	1 31 to 1 82	....	1 50	1 29 to 1 38	33 to 1 08	3 21 to 4 04
Mine Hill Gap	1 97 to 5 33	2 07	1 21 to 1 67	1 00	1 37 to 2 07	85 to 1 14	1 95 to 2 60	....	1 67	....	1 53 to 2 07	1 11	1 50	1 21 to 1 50	37 to 83	2 69 to 4 33
Knickerbocker	1 50 to 6 45	2 07	1 33 to 1 95	1 04 to 1 14	1 77 to 1 99	85	2 00 to 2 33	....	1 21 to 1 83	83 to 92	1 30 to 1 77	34	1 37	....	46 to 1 17	3 42 to 4 10
East Franklin	1 29 to 5 59	2 07	1 21 to 1 83	....	1 77 to 2 01	68 to 1 02	1 33 to 2 69	....	1 67 to 1 83	50	1 77 to 1 86	85 to 1 19	....	1 33	33 to 67	2 31 to 4 00
Glendower	1 65 to 4 14	2 07	1 25 to 1 80	1 17	2 07 to 1 36	68 to 77	1 65 to 2 50	....	1 65 to 1 83	83 to 1 17	1 49 to 1 87	....	1 50	1 28	37 to 1 17	2 31 to 3 85

ANTHRACITE COAL—WAGES—CONTINUED.

NAME OF COLLIERY.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers—men	Inside laborers—boys	Outside mechanics—men	Outside mechanics—boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers—men	Inside mule drivers—boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers
Phila. and Reading Coal and Iron Co—Continued																
Helfenstein	$1 56 to 4 27	$2 07	$1 50 to 1 84	......	$1 77 to 1 89	$ 85	$1 54 to 2 50	......	$1 34 to 1 83	......	$1 42	...,	$1 50	......	$ 42 to 1 17	$3 27 to 4 04
Elmwood	1 20 to 4 07	2 07 to 2 21	2 33 to 1 67	1 17	1 33 to 1 57	81	1 80 to 2 33	$ 83	1 37 to 1 83	$1 08	1 28	$ 98 to 1 10	1 50	......	42 to 1 17	3 27 to 3 85
Keystone	1 86 to 5 28	2 14	1 25 to 1 83	1 12	1 95 to 2 23	1 06	1 73 to 2 33	......	1 35 to 1 83	79 to 1 12	1 45 to 1 96	......	1 12	$1 29 to 1 35	50 to 83	2 69 to 4 47
Indian Ridge	1 71 to 5 60	2 07	1 50 to 1 83	......	1 77 to 2 07	85	1 50 to 2 33	......	1 33	92 to 1 17	1 23 to 1 96	94 to 1 10	1 50 to 1 67	......	42 to 1 17	2 16 to 3 46
Locust Spring	1 80 to 4 69	2 07	1 33 to 1 67	......	1 77 to 2 16	94	1 73 to 2 50	......	1 83	1 17	1 61 to 2 07	......	1 33 to 1 50	......	42 to 1 17	3 54 to 4 31
Merian Colliery	2 07 to 4 54	2 07	1 25 to 1 83	96	1 77 to 2 12	75 to 1 02	1 73 to 2 50	......	1 66 to 1 83	1 12	1 40 to 1 87	1 00	......	1 21	46 to 1 08	2 31 to 4 08
Middle Creek shaft	1 48 to 3 45	2 07 to 2 17	1 35 to 1 67	67 to 1 17	1 70 to 1 99	77 to 1 19	1 73 to 2 33	......	1 83	77 to 83	1 87	1 00 to 1 17	1 50	1 33 to 1 50	33 to 1 00	2 31 to 4 63
* General average	3 10	2 10	1 58	86	1 88	83	1 88	1 05	1 63	1 05	1 72	97	1 44	1 39	69	3 08

* In order to ascertain the foregoing averages, we have been obliged to take the number of each class as shown in table B, which has involved us in a labyrinth of figures and calculations. However, we believe the averages are as near correct as it is possible for us to determine, from the data at hand.

B.—ANTHRACITE—EMPLOYEES, PRODUCTION AND VALUE.

NAME OF COLLIERY.	No. of men employed.......	No. of boys employed	Total number of men and boys,	Days in operation..........	Production, tons	Value..........
Philadelphia and Reading Coal and Iron Company—						
Buckville..............................	125	52	177	112½	16,812	$40,431
North Franklin, No. 1..................	103	48	151	208	36,812	101,300
North Franklin, No. 2..................	203	62	265	166¼	43,500	115,526
North Mahanoy	133	41	174	148	40,000	100,215
Otto...................................	167	65	232	119¼	35,694	99,186
Mt. Carmel Shaft.......................	163	59	222	125	21,076	59,574
Oak Dale...............................	145	64	209	118¾	31,278	77,802
Phœnix Park, No. 2.....................	104	40	144	113¾	27,060	74,676
Potts Colliery.........................	173	87	260	121½	49,910	107,860
Plank Ridge............................	299	121	420	132	81,737	207,467
Pine Forest............................	134	47	181	137	26,910	67,448
Preston, No. 2	154	66	220	124	39,568	96,849
Preston, Nos. 3 and 4..................	111	38	149	129¾	16,536	42,656
Preston, No. 1.	83	29	112	125¾	8,219	21,455
Richardson Colliery....................	105	29	134	59½	4,906	13,511
Tunnel Colliery	192	72	264	139	50,054	130,283
West Shenandoah........................	145	67	212	140½	30,078	69,548
West Brookside.........................	263	62	325	138¾	68,537	220,992
Thomaston	204	72	276	128¾	41,104	106,944
Ellangowan Shaft.......................	103	3	106	134	....	....
Ellangowan	220	83	303	130½	53,984	139,755
Beechwood	232	100	332	126	44,768	111,320
Boston Run.............................	142	50	192	150½	39,084	103,516
Bast	206	63	269	147	72,121	185,243
Forestville............................	125	64	189	130½	33,737	87,628
Eagle Hill Shaft.......................	131	49	180	135	26,953	70,378
Anchor.................................	159	44	203	119¾	19,664	52,117
Locust Run.............................	182	73	255	136¼	43,053	106,889
Mahanoy City...........................	167	46	213	140¼	51,400	132,599
Mine Hill Gap..........................	239	94	333	135¼	53,926	137,220
Knickerbocker	208	101	309	134	64,593	164,597
East Franklin..........................	120	43	163	130¼	26,340	72,613
Glendower..............................	128	54	182	120½	24,322	62,259
Helfenstein............................	73	21	94	122¾	15,974	40,977
Elmwood	117	45	162	140½	25,738	64,762
Keystone	144	60	204	128	23,647	62,049
Indian Ridge...........................	286	98	384	144	98,569	257,125
Locust Spring	137	66	203	129½	31,863	84,329
Merian Colliery	289	59	348	142½	86,620	228,442
Middle Creek Shaft	147	48	195	66½	9,025	25,224
	6,561	2,385	8,946	*129⅛	1,515,112	3,942,765

* Average days in operation.

A.—ANTHRACITE COAL—WAGES.

NAME OF COLLIERY & COMPANY OR INDIVIDUAL OPERATING SAME.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers—men	Inside laborers—boys	Outside mechanics—men	Outside mule drivers—men,	Outside mule drivers—boys,	Inside mule drivers—men	Inside mule drivers—boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers	POST OFFICE.
Schuylkill county—																
Gilberton Coal Company	$3 85	$2 29	$1 50	$1 35	$1 80	......	$2 31	......	$1 08	......	$1 55	$1 60	$1 35	$ 72	$4 60	Gilberton, Pa.
Ellsworth—John R. Davis	1 95	......	1 50	......	1 67	......	2 00	......	1 00	......	75	......	......	50	4 00	Broad Mountain.
E. Mahanoy—Focht, Whitaker & Co	......	......	1 66	......	1 70	......	2 50	......	75	$1 50	......	......	......	60	4 00	Mahanoy City.
West Lehigh—I. C. Winlack,	2 25	1 95	1 50	......	1 65	......	2 00	......	1 25	1 65	......	1 50	......	75	3 00	Middleport, Pa.
Stewartville—W. Montelius,	3 28	2 05	1 58	......	1 74	......	2 35	......	1 20	......	1 15	1 77	......	78	4 50	327 Walnut st.
Peak Mountain—Geo. Wilson	......	2 00	......	1 66	......	......	......	......	......	......	......	......	......	......	......	Pottsville.
Big Mine Run—Jer. Taylor & Co	3 20	2 25	1 50	......	1 95	......	2 50	......	1 35	1 90	......	......	......	75	......	Ashland.
Greenback—Thos. Gorman	76 cts p. car.	....	1 66	......	2 00	......	2 50	$1 25	......	1 66	......	1 50	90	......	4 00	Port Carbon.
Pine Creek—Wm. Taggart	$2 50	2 17	1 67	......	1 83	......	2 33	......	90	......	1 33	1 67	......	60	3 50	Mahanoy City.
Stanton—Miller, Hoch & Co.,	3 50	2 25	1 50	1 25	1 75	$1 25	2 75	......	1 25	1 25	1 25	1 50	1 35	75	5 00	Pottsville.
Enterprise—J. R. Cleaver	......	2 03	1 73	......	1 58	......	2 25	......	1 33	......	1 50	......	......	50	4 33	Ashland.
Eagle Vein—Johns Bros.	3 19	2 24	1 73	......	1 90	......	2 45	......	91	......	1 16	......	......	74	......	St. Clair.
Kalmia—Phillips & Sheaffer,	2 70	2 25	1 66	......	1 91	......	2 50	......	83	1 83	1 14	1 66	1 50	60	4 72	Orwin.
Girard—T. Garretson	......	......	1 50	......	1 80	......	2 75	1 16	......	1 42	......	......	67	......	4 00	Pottsville.
Furnace—Atkins & Bros.	3 00	2 00	1 80	......	1 90	1 20	2 25	......	1 05	......	1 40	1 80	......	75	4 00	Pottsville.
Vaughn & Jones	1 50	2 50	......	......	1 75	......	1 75	1 70	......	1 50	......	1 66	......	75	2 50	Ashland.
Foresters—J. King, Tyler & Co	2 to 2 75	....	1 66	......	2 16	......	2 16	......	......	......	1 17	......	......	67	......	Mahanoy City.
Diamond—Whitaker & Co.	......	......	1 50	......	1 68	......	2 07	......	75	......	1 00	......	......	50to 66	....	210½ Walnut st.
Cuyler—S. M. Heaton & Co.	2 75	1 95	1 50	......	1 65	......	2 17	1 50	......	1 50	......	2 40	1 25	65	4 00	Raven Run.

Keahley's Run—Thomas Coal Company	3 13	1 95	1 50	......	1 71	75	2 20	1 79	......	1 65	......	1 50	1 97	83	3 05	Shenandoah.
Delano—Samuel Atkinson	3 50	......	1 50	......	1 65	......	2 50	1 16	......	1 16	......	1 50	......	67	5 00	Station H, Phil'a.
Staffordshire—Jones, Ward & Co.	......	2 10	......	... ..	1 95	......	2 50	......	1 00	......	1 33	1 33	......	83	......	Mahanoy City.
Wm. Penn—E. & G. Brooke,	3 50	2 00	1 50	......	1 75	1 12	2 25	1 25	......	2 00	......	1 50	......	1 00	3 50	Birdsboro'.
West End—Thomas J. Wolf, Assignee	2 70	2 00	1 67	......	1 67	......	2 25	......	71	......	1 00	......	......	55	3 75	Tremont.
Lawrence — Lawrence, Merkel & Co.	......	2 02	1 64	......	1 79	......	2 31	1 72	1 34	......	......	1 50	......	87	4 11	Freckville.
Turkey Run—Haas, Brenizer & Co.	3 00	2 00	1 50	......	1 65	......	2 50	1 50	......	1 65	......	......	......	75	......	Shenandoah.
Phillips—R. P. Phillips & Co.	......	......	1 67	1 33	1 82	......	2 50	......	1 33	......	1 41	1 33	......	67	3 00	Mahanoy City.
Shenandoah City—Jas. Naill,	6 89	1 95	1 65	1 00	1 65	65	2 25	......	1 25	1 50	1 35	......	......	67	3 50	Postville.
Bear Run—Wiggan & Trebel,	3 11	......	1 54	......	1 77	79	2 27	......	1 25	1 72	1 55	1 50	......	93	4 16	Mahanoy City.
Colket—T. J. Wolf, Assignee,	2 53	1 95	1 50	......	1 65	......	2 23	......	71	......	1 32	......	......	63	3 75	Tremont.
Koh-i-noor—Rich. Heckscher	3 42	2 18	1 70	......	1 82	......	2 50	1 70	1 33	1 80	1 38	......	1 25	87	4 40	Shenandoah.
St. Nicholas Coal Company,	3 16	2 50	1 50	......	1 75	......	2 21	......	1 14	1 75	......	1 75	60	......	4 75	St. Nicholas.
General average	3 08	2 11	1 59	1 31	1 77	1 00	2 32	1 47	1 07	1 61	1 26	1 61	1 20	71	3 83	

ANTHRACITE—EMPLOYEES, PRODUCTION AND VALUE.

NAME OF COLLIERY.	Number of men employed.......	Number of boys employed.......	Total number of men and boys...	Days in operation,	Production—tons,	Value............	POST OFFICE.
Schuylkill county—							
Gilberton Coal Company	152	68	220	*97	$50,436	$144,432	Gilberton, Pa.
Ellsworth—John R. Davis	23	22	45	225	15,000	37,500	Broad Mountain.
Focht, Whitaker & Co., East Mahanoy	154	82	236	175	50,000	125,000	Mahanoy City.
West Lehigh—J. C. Winlack	50	29	79	243	18,422	44,628	Middleport, Pa.
Stewartville—Wm. Montelius	186	100	286	129¼	†44,276	10,690	327 Walnut st., Philad.
Peak Mountain—George Wilson	1	4	5	75	500	1,250	Pottsville.
Big Mine Run—Jeremiah Taylor & Co	255	95	350	125	50,467	130,039	Ashland.
Greenback—Thomas Gorman	151	....	151	125	20,275	53,353	Port Carbon.
Phœnix Park—Lloy, Glover & Co	200	....	200	......	50,000	125,000	Minersville.
Pine Creek—Wm. Taggert	104	31	135	114	15,866	39,665	Mahanoy City.
Stanton—Miller, Hoch & Co	158	89	247	160	61,461	155,731	Pottsville.
Enterprise—J. R. Cleaver	41	20	61	150	10,963	25,000	Ashland.
Eagle Vein—Johns Bros	165	80	245	214	85,515	233,248	St. Clair.
Kalmia—Phillips & Sheafer	132	65	197	274	82,778	185,000	Orwin.
Girard—T. Garetson	250	....	250	135	45,862	117,984	Pottsville.
Furnace—Atkins Bros	158	42	200	313	61,930	160,000	Pottsville.
Vaughan & Jones	16	4	20	20	2,232	5,133	Ashland.
Foresters—T. King, Tylor & Co	25	8	33	275	10,097	20,607	Mahanoy City.
Diamond—Whitaker & Co	100	52	152	150	9,109	31,917	No. 210½ Walnut st., Phil'a.
Cuyler—S. M. Heaton & Co	245	52	297	140	55,317	101,635	Raven Run.
Keahley Run—Thomas Coal Company	176	81	257	155	80,000	200,000	Shenandoah.
Delano—Samuel Atkinson	96	33	129	135	24,224	60,214	Station H, Philadelphia.
Staffordshi e—Jones, Ward & Co	30	13	43	255	11,063	27,658	Mahanoy City.
William Penn—E. & G. Brooke	430	105	535	150	107,000	214,000	Birdsboro'.
West End—Thomas J. Wolf, Assignee	76	50	126	153	16,166	38,798	Tremont.
Lawrence—Lawrence, Merkel & Co	171	92	263	154	66,148	195,361	Freckville.
Turkey Run—Haas, Brenizer & Co	195	100	295	140	61,117	152,792	Shenandoah.
Phillips—R. P. Phillips & Co	41	23	64	190	23,870	67,477	Mahanoy City.
Shenandoah City—James Naill	300	100	400	140	61,604	278,978	Pottsville.

Beaver Run—Wiggan & Trebel	113	46	159	140	52,915	144,410	Mahanoy City.
Colket—Thomas J. Wolf, Assignee	132	52	184	101	14,701	33,813	Tremont.
Koh-i-noor—Richard Heckscher	282	76	358	148	89,640	170,316	Shenandoah.
St. Nicholas Coal Company	125	60	185	155	42,837	110,120	St. Nicholas.
	4,733	1,624	6,357	‡164	1,391,791	3,441,749	

* Other employees worked longer. † Estimated. ‡ Average days,

LOCATION OF COLLIERIES OWNED BY THE LEHIGH AND WILKESBARRE COAL COMPANY.

WILKESBARRE DIVISION.		Post office address.
Breaker No. 1, Diamond	Luzerne county	Wilkesbarre.
3, Kidder	do	do.
4, Empire	do	do.
5, Empire	do	do.
6, Hartford	do	Ashley.
7, Audenried	do	Wilkesbarre.
8, Jersey	do	Ashley.
9, Sugar Notch	do	Sugar Notch.
10, Sugar Notch	do	do.
11, Lance	do	Plymouth.
12, Dodson	do	do.
13, Gaylord	do	do.
15, Nottingham	do	do.
16, Reynolds	do	do.
17, Hanover	do	Hanover.
18, Wanamie	do	Wanamie.
19, Wanamie	do	do.
LEHIGH DIVISION.		
Nesquehoning breaker	Carbon county	Nesquehoning.
Breaker No. 4	do	Lansford.
5	do	do.
6	do	do.
8	Schuylkill county	do.
9	Carbon county	do.
10	Schuylkill county	do.
11	do	do.
HONEY BROOK DIVISION.		
Breaker No. 2	Carbon county	Audenried, Carbon county.
1	Schuylkill county	do do.
4	do	do do.
5	do	do do.

ANTHRACITE COAL—WAGES.

WILKESBARRE DIVISION.

NAME OF COLLIERY.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers, men	Inside laborers, boys	Outside mechanics—men	Inside mechanics—boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers, men	Inside mule drivers, boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers
Lehigh and Wilkesbarre Coal Company.																
Diamond No. 1	......	$2 25	$1 50	......	$2 00	$ 85	$2 25	....	$1 50	......	$1 70	......	$1 50	......	$ 75	$4 00
Kidder No. 3	......	2 25	1 50	......	2 00	85	2 25	....	1 35	......	1 70	$1 35	1 50	......	60	5 00
Empire No. 4	......	2 25	1 50	......	2 00	85	2 25	....	1 40	......	1 65	......	1 50	......	75	5 00
Empire No. 5	......	......	1 50	......	2 15	85	2 25	....	1 37	......	1 45	......	1 50	......	75	4 00
Hartford No. 6	......	2 25	1 50	......	1 75	......	2 25	....	......	$1 35	......	1 90	1 50	......	70	4 00
Audenried No. 7	......	2 25	1 50	......	2 17	85	2 36	....	1 12	......	1 45	......	1 50	......	75	5 00
Jersey No. 8	......	2 25	1 50	......	1 70	......	2 25	....	......	1 50	......	1 90	1 50	......	70	*100 00
Sugar Notch No. 9	$3 00	2 25	1 25 to1 55	......	1 90	......	2 25	....	......	1 00 to1 40	......	1 10 to1 50	......	......	43 to1 00	*100 00
Sugar Notch No. 10	3 60	2 25	1 25 to1 55	......	1 90	......	2 25	....	......	1 00 to1 40	......	1 00 to1 50	......	......	45 to1 00	*100 00
Lance No. 11	......	2 25	1 50	......	1 70	......	2 25	....	......	1 25	......	1 00 to1 75	......	$1 25	40 to1 00	......
Dodson No. 12	......	2 25	1 50	......	1 70	......	2 25	....	......	1 25	......	1 00 to1 75	......	1 20	40 to1 00	......
Gaylord No. 13	......	2 25	1 50	......	1 70	......	2 25	....	......	1 25	......	1 00 to1 75	......	1 25	40 to1 00	......
Nottingham No. 15	......	2 25	1 50	......	1 70	......	2 25	....	......	1 25	......	1 00 to1 75	......	1 25	40 to1 00	......
Reynolds No. 16	......	2 25	1 50	......	1 70	......	2 25	....	......	1 25	......	1 00 to1 75	......	1 25	40 to1 00	......
Nesquehoning Breaker	2 50 to 5 00	2 10	1 00 to1 33	......	1 60 to1 80	......	1 75 to2 60	....	1 70	85 to1 12	......	1 00 to1 65	1 60	1 00	36 to 85	*125 00
Breaker No. 4	2 50 to 5 00	2 10	1 33 to1 60	$ 85	1 65 to1 80	......	1 75 to2 60	....	1 50 to1 60	85 to1 50	......	1 00 to1 65	1 60	1 00 to1 50	36 to 85	*125 00

* Per month.

ANTHRACITE COAL—WAGES—CONTINUED.

NAME OF COLLIERY.	Miners on contract..	Miners on wages....	Outside laborers—men..............	Outside laborers—boys..............	Inside laborers, men	Inside laborers, boys	Outside mechanics—men..............	Outside mechanics—boys..............	Outside mule drivers—men.........	Outside mule drivers—boys.........	Inside mule drivers, men..............	Inside mule drivers, boys..............	Dumpers............	Slate pickers—men..	Slate pickers—boys,	Mining overseers....
Lehigh and Wilkesbarre Coal Company—Continued.																
Breaker No. 5..............	$2 50 to 5 00	$2 10	$1 33 to1 60	$ 85	$1 80	$1 25	$1 75 to2 60	....	....	$ 85 to1 12	....	$1 00 to1 65	$1 60	$1 00	$ 36 to 85	*$83 33 to125 00
Breaker No. 8..............	2 50 to 5 00	2 10	1 33 to1 60	85 to1 25	1 65 to1 80	....	1 75 to2 60	....	....	85 to1 12	....	1 00 to1 65	1 60	1 00	36 to 85	*83 33 to125 00
Breaker No. 9..............	2 50 to 5 00	2 10	1 33 to1 60	85 to1 25	1 65 to1 80	....	1 75	....	$1 70	85 to1 12	1 65 to1 80	1 00 to1 65	1 60	1 00	36 to 85	*83 33 to125 00
Breaker No. 10..............	2 50 to 5 00	2 10	1 33 to1 60	85 to1 25	1 65 to1 80	....	1 75 to2 60	....	1 12	85 to1 12	....	1 00 to1 65	1 60	1 00	36 to 85	*83 33 to125 00
Breaker No. 11........	2 50 to 5 00	2 10	1 33 to1 60	....	1 65 to1 80	....	1 75 to2 60	....	....	85 to1 12	....	1 00 to1 65	....	....	....	*125 00
Breaker No. 18..............	....	2 25	1 50 to1 75	1 00 to1 50	1 50 to2 10	85 to1 75	2 25	....	1 60	85	1 90	1 35	1 62 to2 25	1 35	45 to 90	*100 00
Breaker No. 19..............	....	2 25	1 50	1 50	2 00 to2 10	85 to1 80	2 25	....	....	85 to1 12	....	1 25 to2 00	1 62 to2 25	....	45 to 90	*100 00
Honey Brook breaker No. 1,	3 27 to 5 15	2 22	1 35 to1 50	....	1 80 to2 10	....	2 25 to2 75	....	....	75 to1 25	1 81	90 to1 35	1 60	1 75	35 to 75	5 00
Tresckow breaker No. 2....	2 45 to 4 24	2 22	1 35 to1 50	....	2 00 to2 25	....	2 25 to2 65	....	....	75 to1 25	1 81	90 to1 35	1 60	1 17 to1 25	35 to 75	5 00
Honey Brook breaker No.4,	2 86 to 3 25	2 22	1 35 to1 50	....	1 81	....	2 25 to2 65	....	....	1 00 to1 25	1 81	90 to1 50	1 60	1 17 to1 25	46 to 90	4 00
Honey Brook breaker No.5,	2 99 to 4 82	2 22	1 35 to1 50	....	1 81	....	2 25 to2 65	....	....	75 to1 25	1 81	90 to1 50	1 60	1 17 to1 25	45 to 90	....
Honey Brook breaker No.6,	2 50 to 5 00	2 10	1 00 to1 33	....	1 65 to1 80	....	1 75 to2 00	....	1 70	85 to1 12	....	1 00 to1 65	1 60	1 00	36 to 80	*125 00
	3 50	2 20	1 44⅛	1 08⅛	1 77	1 01½	2 59¼	....	1 46½	1 12¾	1 71⅔	......	1 64½	1 17	61	4 50

* Per month.

ANTHRACITE—EMPLOYEES, PRODUCTION AND VALUE.

NAME OF COLLIERY.	Number of men employed....	Number of boys employed....	Total number of men and boys,	Days in operation	Production—tons	Value..........
Luzerne co., Wilkesbarre Div.—						
Lehigh & Wilkesbarre Coal Co., No. 1,	697	158	855	131	198,981	$397,962
Do............do.........No. 3,	256	68	324	131	55,912	111,824
Do............do.........No. 4,	621	205	826	131	132,995	265,950
Do............do.........No. 5,	207	75	282	131	42,688	85,376
Do............do.........No. 6,	351	150	501	138	123,792	247,584
Do............do.........No. 17,	416	114	530	131	22,565	45,130
Jersey, No. 8..........................	133	84	217	116	40,126	80,250
Sugar Notch, No. 9....................	340	112	452	127	86,625	173,250
Sugar Notch, No. 10..................	352	116	468	124	54,546	109,092
Lance, No. 11..........................	243	63	306	133	62,990	125,980
Dodson, No. 12.........................	296	97	393	98½	49,441	98,882
Gaylord, No. 13........................	261	89	350	141¾	78,665	157,330
Nottingham, No. 15....................	400	155	555	101	70,615	141,230
Reynolds, No. 16......................	200	100	300	145½	73,163	146,326
Nesquehoning Breaker................	208	108	316	150	63,398	126,796
Breaker No. 4..........................	208	126	334	150	53,749	107,498
Do....No. 5...........................	202	113	315	150	50,124	100,248
Do....No. 8...........................	238	154	392	150	48,952	97,904
Do....No. 9...........................	223	138	361	150	61,327	122,654
Do....No. 10..........................	245	106	351	150	63,886	127,722
Do ...No. 11..........................	43	5	48	300	....	....
Do....No. 18..........................	431	126	557	156	78,467	156,934
Do....No. 19..........................	204	78	282	158	68,266	136,532
Honey Brook Division—						
Honey Brook Breaker, No. 1..........	258	48	306	128½	55,637	111,274
Tresckow Breaker, No. 2..............	261	82	343	125½	63,341	126,682
Honey Brook Breaker, No. 4..........	161	67	228	131	51,729	102,458
Do........do.....No. 5..........	218	64	282	140	85,229	170,458
Do........do.....No. 6..........	149	119	268	150	55,989	111,978
	7,822	2,922	10,744	141⅝	1,894,198	3,788,396

ANTHRACITE COAL—WAGES.

NAME OF COLLIERY.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers—men	Inside laborers—boys	Outside mechanics—men	Outside mechanics—boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers—men	Inside mule drivers—boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers
Delaware and Hudson Canal Co.—Post Office, Plymouth Luzerne co. *	$2 00	$1 94	$1 50	......	$1 65	......	$2 12	......	......	$ 73	......	$ 87	$1 50	$1 48	$ 44	$4 00

ANTHRACITE—EMPLOYEES, PRODUCTION AND WAGES.

NAME OF COLLIERY.	Number of men employed	Number of boys employed	Total number of men and boys,	Days in operat'n	Production, tons	Value
Delaware and Hudson Coal Company—Post Office, Plymouth, Luzerne county. *	4,360	1,475	5,835	250	2,167,948	$2,922,527

*This includes the following collieries: Racket Brook Breaker; Coal Brook; No. 1 Shaft; No. 3 Shaft; Powderly; White Oak; Grassy Island; Olyphant, No. 1; Olyphant, No. 2; Marvine Shaft; Legitt's Creek; Von Storch; Mill Creek; Pine Ridge; Laurel Run; Baltimore Slope; Baltimore Tunnel; Plymouth, No. 1; Plymouth, No. 2; Plymouth, No. 3; Plymouth, No. 4; Plymouth, No. 5.

ANTHRACITE COAL—WAGES.

NAME OF COLLIERY.	Miners on contract	Miners on wages..	Outside laborers—men	Outside laborers—boys	Inside laborers — men.............	Inside laborers — boys	Outside mechanics —men...........	Outside mechanics —boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers—men	Inside mule drivers—boys	Dumpers..........	Slate pick'rs—men	Slate pick'rs—boys	Mining overseers..
Columbia County—																
Centralia Colliery......................	*$4 00	$2 25	$1 67	......	$2 00	......	$2 50	......	$1 50	$1 50	......	$1 75	$2 40	......	$0 75	$4 00
Hazel Dell..............................	†15 00	†12 00	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Continental.............................	†15 00	†12 00	......	......	......	......	......	......	......	......	......	......	......	......	......	......
	3 00	2 08	1 67	......	2 00	......	2 50	......	1 50	1 50	......	1 75	2 40	......	75	4 00
Dauphin County—																
North side..............................	......	$2 00	$1 50	......	$1 50	......	......	......	......	......	$1 50	......	......	......	......	$2 50
Williamstown Colliery...................	$3 43	2 17	1 66	......	1 83	......	$2 50	......	$2 00	$1 08	......	$1 33	......	......	$0 67	......
Big Lick................................	3 76	2 10	1 60	......	1 76	$1 00	2 00	......	1 60	1 10	1 76	1 16	$1 60	$1 50	50	......
Short Mountain Colliery.................	3 58	2 10	1 60	......	1 76	1 00	2 10	......	1 75	1 00	1 76	1 16	1 60	1 43	50	......
	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......

* Per day. † Per week.

ANTHRACITE EMPLOYEES—PRODUCTION AND VALUE.

NAME OF COLLIERY.	Number of men employed	Number of boys employed	Tot. number of men and boys	Days in operation	Production—tons	Value
Columbia County—						
Centralia Colliery	150	50	200	....	....	....
Hazell Dell	124	68	192	100	20,488	$43,043 38
Continental	176	81	257	130	48,791	91,223 59
	450	199	649	115	69,279	134,266 97
Dauphin County—						
North side	8	....	8	200	3,300	Not given.
Williamstown Colliery	448	230	678	....	305,714	" "
Big Lick Colliery	200	85	285	222	69,263	" "
Short Mountain Colliery	426	115	541	244	152,728	" "
	1,082	430	1,512	222	531,005	....

ANTHRACITE COAL—WAGES.

NAME OF COLLIERY.	Miners on contract	Miners on wages..	Outside laborers—men.	Outside laborers—boys.	Inside laborers—men.	Inside laborers—boys	Outside mechanics—men.	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers—men	Inside mule drivers—boys.	Dumpers.	Slate pickers—men	Slate pickers—boys	Mining overseers.	POST OFFICE.
Carbon county—																
Buck Mountain Colliery,	$2 31	$2 16	$1 50	$ 67	$1 86	......	$2 35	$2 16	$ 67	$1 81	$ 67	$1 60	$1 30	$ 40	$3 23	Buck Mountain.
Middle Lehigh Coal Co....	*75	1 95	1 50	......	1 75	......	2 25	1 50	......	1 25	......	1 50	1 00	......	4 00	Mauch Chunk.
	......	2 05½	1 50	67	1 80½	......	2 30	1 83	67	1 53	67	1 55	1 15	40	3 61	

* Per car.

ANTHRACITE—EMPLOYEES, PRODUCTION AND VALUE.

NAME OF COLLIERY.	Number of men employed.....	Number of boys employed.....	Total number of men and boys,	Days in operat'n,	Production, tons	Value..........	POST OFFICE.
Carbon county—							
Buck Mountain Colliery	293	45	338	113	55,616	$111,232	Buck Mountain.
Middle Lehigh Coal Company	400	......	400	140	77,839	181,146	Mauch Chunk.
	693	45	738	126½	133,455	292,378	
Beaver Brook	196	75	271	120	54,000	....	Audenreid.

ANTHRACITE COAL—WAGES.

NAME OF COLLIERY.	Miners on contract......	Miners on wages........	Outside laborers—men..	Outside laborers—boys..	Inside laborers—men....	Inside laborers—boys...	Outside mechanics—men	Outside mule drivers—men..................	Outside mule drivers—boys..................	Inside mule drivers—men..................	Inside mule drivers—boys..................	Dumpers..............	Slate pickers—men.....	Slate pickers—boys.....	Mining overseers........	POST OFFICE.
Northumberland—																
Luke Fidler, Mineral Railroad & Mining Co.........	$2 40	$2 13	$1 67	....	$1 83	....	$2 35	$1 25	......	$1 55	......	$1 75	.....	$ 83	$3 85	Shamokin, Pa.
Cameron Mining Co........	2 75	2 20	1 66	....	2 00	....	2 35	1 35	......	1 75	......	1 66	......	82	4 75	......do.
Hickory Ridge Mining Co..	2 25	2 03	1 60	....	1 94	....	2 25	1 21	......	1 50	......	1 37	......	1 00	3 85	......do.
Hickory Swamp Mining Co.,	2 25	2 13	1 67	....	1 92	....	2 25	1 37	......	1 75	......	1 75	......	90	4 50	.....do.
Bear Valley, A. A. Heim & Goodwill..................	3 00	1 92	1 42	....	1 65	....	2 00	......	$1 00	1 92	$1 15	......	......	......	......	......do.
George Fales, A. A. Heim & Goodwill..................	3 00	......	1 33	....	1 65	....	2 50	1 33	......	1 75	......	......	......	......	......	......do.
Reliance, T. Baumgardner,	2 25	2 33	1 50	....	2 17	....	2 25	......	1 20	1 67	......	......	$1 25	62	......	311 Walnut st., Phila.
Ben. Franklin, Douty & Baumgardner	2 80	......	1 60	....	1 88	....	2 43	......	1 19	1 83	......	1 75	.....	72	5 00	Shamokin.
Enterprise, Enterprise C. C.	2 67	......	1 66	....	1 83	$ 83	2 25	1 60	83	1 88	......	1 50	1 20	67	6 00	311 Walnut street.
Locust Gap, Graeber & Shepp	3 70	2 04	1 50	....	1 83	....	2 25	1 00	......	1 66	......	......	1 00	50	4 00	Locust Gap.
Excelsior, Excelsior Coal Co.	3 20	......	1 60	....	2 00	....	2 75	......	1 05	1 95	......	......	1 27	75	4 00	Excelsior.
Black Diamond, William Schwenk & Co............	2 00	2 00	1 58	....	....	....	2 05	90	......	1 75	......	......	.....	60	......	Mt. Carmel.
Franklin, Lovell, Booth & Elmer....................	2 50	1 83	1 50	$ 60	1 83	....	......	......	1 00	2 00	......	1 83	......	60	......	Shamokin.
Buck Ridge, May, Audenreid & Co..................	2 50	2 16	1 56	....	1 83	....	2 25	2 00	1 25	1 66	1 50	1 50	......	62	3 00	......do.
Henry Clay, J. Langdon & Co	2 45	2 16	1 60	1 00	1 83	....	2 25	......	1 00	2 25	1 83	1 66	......	70	3 00	Elmira, N. Y.
Burnside, Isaac May & Co..	2 50	2 00	1 50	....	1 66	....	2 16	......	......	2 00	1 50	1 75	1 25	60	4 00	Shamokin.
Maton & Bro................	2 50	......	1 83	....	....	....	2 50	......	1 16	......	1 16	......	......	80	2 50	Mt. Carmel.
	2 56⅝	2 07¾	1 57½	80	1 85⅔	83	2 30	1 33	1 07⅝	1 80	1 42¾	1 65	1 19	70	4 03	

ANTHRACITE—EMPLOYEES, PRODUCTION AND VALUE.

NAME OF COLLIERY.	Number of men employed......	Number of boys employed......	Total number of men and boys,	Days in operation	Production--tons	Value...........	POST OFFICES.
Luke Fiddler, Railroad and Mining Co.	258	88	346	228	102,981	$205,962*	Shamokin.
Cameron, Railroad and Mining Co.	603	106	709	265	265,264	530,528*	Shamokin.
Hickory Ridge, Railroad and Mining Co.	172	22	194	165	19,460	38,920*	Shamokin.
Hickory Swamp Mining Co.	247	68	315	184	70,854	141,708*	Shamokin.
Bear Valley, A. A. Heim & Goodwill	269	10	279	......	13,578	27,156*	Shamokin.
George Tales, A. A. Heim & Goodwill	83	......	83	......	6,005	12,010*	
Reliance, Thomas Baumgardner & Co	131	74	205	135	39,714	85,829	311 Walnut st., Phil'a.
Ben Franklin, Douty & Baumgardner	121	33	154	200	46,905	93,810*	Shamokin.
Enterprise, Enterprise Coal Co	184	40	224	141	80,000	200,000	311 Walnut st., Phil'a.
Locust Gap, Graeber & Shepp	181	59	240	90	19,000	41,800	Locust Gap.
Excelsior, Excelsior Coal Co.	136	46	182	140	43,463	119,523	Excelsior.
Black Diamond, Wm. Schwenk & Co	39	15	54	87	5,961	12,519	Mt. Carmel.
Franklin, Lovell, Booth & Elmer	37	13	50	225	10,667	28,124	Shamokin.
Buck Ridge, May, Audenried & Co.	246	50	296	240	110,237	220,474	Shamokin.
Henry Clay, J. Langdon & Co	131	58	189	267	85,945	193,376	Elmira, N. Y.
Burnside, Isaac May & Co.	193	69	262	240	108,247	210,364	Shamokin.
Maton & Bro	28	14	42	175	8,843	12,910	Mt. Carmel.
	3,059	765	3,824	†185½	1,037,124	$2,175,013	

† Average.

* Estimated.

ANTHRACITE COAL—WAGES.

NAME OF COLLIERY.	Miners on contract	Miners on wages	Outside laborers—men	Outside laborers—boys	Inside laborers—men	Inside laborers—boys	Outside mechanics—men	Outside mechanics—boys	Outside mule drivers—men	Outside mule drivers—boys	Inside mule drivers—men	Inside mule drivers—boys	Dumpers	Slate pickers—men	Slate pickers—boys	Mining overseers	POST OFFICE.
Luzerne county—																	
Hillman's Colliery	$2 25	$2 25	$1 50	.....	$2 00	.....	$2 25	.....	$1 50	.....	$1 40	.....	.....	.....	$ 60	.....	Wilkesbarre.
Waterman & Beaver	*3 25	3 25	1 75	.....	1 75	.....	2 25	.....	1 10	.....	1 10	.....	.....	.....	56	.....	Danville, Montour co.
Do......Kingston mines,	†3 12	3 12	1 50	.....	1 50	.....	2 10	.....	.....	.....	1 50	.....	.....	$1 03	60	.....	Danville, Montour co.
Salem Coal Company	2 25	.....	1 50	.....	1 80	.....	2 25	.....	1 50	.....	1 60	.....	$2 00	75	.....	.....	Shickshinny, Pa.
G. B. Markle & Co.	3 17	.....	1 50	$1 25	1 93	$1 52	2 25	$1 30	.....	$1 25	1 90	$1 50	1 60	1 33	55	$3 00	Jeddo.
Do.......Oakdale, No. 2,	2 73	.....	1 50	1 25	1 93	.....	2 25	1 30	.....	1 25	1 90	1 50	1 60	1 33	65	3 00	Jeddo.
Do.......Oakdale, No. 1,	2 66	.....	1 50	1 25	1 93	1 52	2 35	1 30	.....	1 25	1 90	1 50	1 60	1 33	65	3 00	Jeddo.
Lattimer Colliery, Nos. 1 and 2, Pardee Bro. & Co	.....	.....	1 67	.....	2 00	.....	2 25	.....	1 50	.....	1 75	.....	1 60	1 35	50	3 25	Hazelton, Pa.
Connal Ridge—J. Leering & Co.,	2 85	2 21	1 50	.....	1 89	1 00	2 50	.....	1 80	1 35	1 89	1 40	1 60	1 35	65	5 00	Eckley.
Yorktown—A. L. Mumper & Co.,	.....	2 25	1 55	.....	2 05	.....	2 75	.....	1 50	.....	1 62	.....	.....	.....	62	3 40	Audenreid.
Warrior Run—A. J. Davis	2 40	2 25	1 50	.....	2 05	.....	2 25	.....	1 50	1 50	1 50	1 50	1 50	1 00	1 00	4 00	Wilkesbarre.
Tunnel, No. 1, Susquehanna Coal Company	3 00	2 25	1 40	.....	2 03	.....	2 25	.....	.....	1 10	.....	1 20	1 40	1 00	60	4 00	Wilkesbarre.
Tunnel, No. 2, Susquehanna Coal Company	3 00	2 25	1 40	.....	2 03	.....	2 25	.....	1 40	1 10	.....	1 20	1 60	1 00	60	4 00	Wilkesbarre.
Tunnel, No. 3, Susquehanna Coal Company	3 19	2 25	1 40	.....	1 83	.....	2 25	.....	.....	1 10	.....	1 17	1 58	1 20	72	4 00	Wilkesbarre.
Cross Creek, Coxe, Bros. & Co.	2 90	2 21	1 55	.....	1 90	.....	2 36	.....	1 75	.....	2 35	1 14	1 60	1 37	61	4 81	Jeddo.
Woodside .....do........do	2 86	2 21	1 55	.....	1 90	.....	2 42	.....	.....	.....	2 39	1 00	1 60	1 38	60	4 81	Jeddo.
Humboldt, Linderman, Skeer & Co.	2 50	2 17	1 50	83	1 90	1 34	2 25	1 83	.....	1 34	.....	1 81	1 34	1 37	55	3 00	Hazelton.
E. Sugarloaf, Linderman, Skeer & Co	2 88	2 12	1 50	.....	1 90	.....	2 50	.....	.....	1 00	.....	1 50	.....	.....	55	3 00	Stockton.

Colerain—W. T. Carter & Co....	‡3 00	.....	1 50	.....	1 80	.....	2 50	.....	.....	1 00	1 75	1 00	...	50 to 1 00	50 to 1 00	2 50	103 Walnut st., Phila.
Harleigh—Harleigh Coal Co.....	3 05	207	1 50	.....	2 07	.....	2 67	.....	.....	1 00	2 00	....	1 60	1 34	50 to 90	3 00 ‖ to 4 00	13 Kelby st., Boston.
Gowan—Roberts' Run Coal Co..	§3 00	2 00	1 33	.....	1 83	.....	1 75	.....	1 33	.....	.....	1 25	1 33	.....	50	100 per mo.	Gowen, Luzerne co.
Upper Lehigh—Upper Lehigh Coal Company................	2 75	2 22	1 00	.....	1 90	....,	2 40	.....	1 75	1 15	1 90	1 25	1 60	1 40	55	4 00	Upper Lehigh, Pa.
Hollenback—Robert S. Pool	3 25	.....	1 50	.....	2 50	.....	2 25	.....	1 50	1 00	1 60	1 47	1 60	1 50	.....	3 00	Pittstown, Pa.
East Boston—W. G. Payne & Co.,	.....	.....	1 50	.....	2 00	.....	2 25	.....	1 25	.....	1 30	.....	.....	70	.....	5 00	....
Spring Mountain—J. C. Haydon & Co.........................	3 90	2 85	1 50	.....	1 90	.....	2 50	.....	.....	1 10	2 00	1 65	.....	1 25	75	3 00	Jeansville, Pa.
	2 90	2 34	1 48	1 14	1 93	1 34	2 32	1 43$\frac{2}{3}$	1 49	1 16	1 75$\frac{1}{2}$	1 35$\frac{1}{2}$	1 56$\frac{2}{3}$	1 18$\frac{5}{8}$	62$\frac{3}{4}$	3 68	

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* Or $81 per month. † Or $78 per month. ‡ From $60 to $100 per month. § Engineers $2 25 per day—firemen $1 66.—$6 per yard.

‖ Engineers from $50 to $75 per month.

ANTHRACITE EMPLOYEES—PRODUCTION AND VALUE.

NAME OF COLLIERY.	Number of men employed..	Number of boys employed..	Total number of men and boys..........	Days in operation..........	Production—tons..........	Value..........	POST OFFICE.
Luzerne County—							
Hillman's Colliery	75	10	85	200	36,000	$60,000	Wilkesbarre.
Waterman & Beaver	24	7	31	150	18,206	32,000	Danville, Montour county.
Do... ....do....(Kingston)	477	134	611	175	234,247	468,500	....do........do......do.
Salem Coal Company	170	....	170	265	50,130	125,172	Shickshiny.
G. B. Markle & Co.	117	25	142	140	56,211	*112,422	Jeddo.
Do........do..Oakdale, No. 2	127	46	173	140	60,102	120,204	Jeddo.
Do........do....do..... No. 1	125	37	162	140	62,114	124,228	Jeddo.
Lattimer Collieries, Nos. 1 and 2—Pardee, Bros. & Co.	304	65	369	150	129,000	258,000	Hazelton.
Connel Ridge—J. Leisering & Co.	288	106	394	123	76,453	202,218	Eckley.
Yorktown—A. L. Mumper & Co	279	81	360	139	72,637	174,801	Audenried.
Warrior Run—A. J. Davis	171	24	195	150	35,000	80,000	Wilkesbarre.
Tunnel, No. 1—Susquehanna Coal Company	457	103	560	148	111,600	223,212	Wilkesbarre.
Do...No. 2 .....do............do.	452	148	600	148	172,361	344,722	Wilkesbarre.
Do...No. 3......do ....do.	344	146	490	143	88,098	176,191	Wilkesbarre.
Holly Wood—							
Calvin Pardee & Co	127	20	147	128	53,741	$107,483	Hazelton, Pa.
Cross Creek—Coxe, Bros. & Co.	231	56	287	122	75,070	166,583	Jeddo.
Woodside—Coxe, Bros. & Co	85	18	103	116	24,352	57,168	Jeddo.
Humbolt—Linderman, Skeer & Co.	132	58	190	136	40,597	103,586	Hazelton.
E. Sugarloaf—Linderman, Skeer & Co.	465	....	465	130	113,960	311,406	Stockton.
Colerain—W. T. Carter & Co	217	56	273	139	92,689	220,124	103 Walnut street, Philadelphia.
Harleigh—Harleigh Coal Company	290	78	368	150	85,435	273,394	No. 13 Kelby street, Boston, Mass.

Gowen—Roberts Run Coal Company	67	25	92	300	27,807	$55,614	Gowen, Luzerne county.
Upper Lehigh—Upper Lehigh Coal Company	402	96	498	142	133,101	314,119	Upper Lehigh, Pa.*
Hollenback—Robert S. Pool	70	12	82	160	25,403	49,566	Pittston.
East Boston—W. G. Payne & Co	193	....	193	175	60,831	121,662	
Spring Mountain—J. C. Haydon & Co	440	148	588	136	174,815	349,630	Jeansville.
	6,975	1,805	8,770	154	2,380,976	5,173,648	
† A. Pardee & Co	836	298	1,134	115	270,824	$541,648	Hazelton.

* Estimated.

† This includes the following collieries: Hazelton mines; Laurel Hill slope No. 3; Sugar Loaf; South Sugar Loaf, and Cranberry East Crystal Ridge mines.

TABLE *of air pressure in pounds avoirdupois per square foot of surface area in shafts at different depths and different degrees of temperature.—Hopton.*

DEGREES OF TEMPERATURE.	Depth, 120 feet.	Depth, 180 feet. lbs. wt.	Depth, 240 feet. Pounds.	Depth, 300 feet. Pounds.	Depth, 360 feet. Pounds.	Depth, 420 feet. Pounds.	Depth, 480 feet. Pounds.	Depth, 540 feet. Pounds.	Depth, 600 feet. Pounds.	Depth, 660 feet. Pounds.	Depth, 720 feet. Pounds.
32	9,710	14,565	19,421	24,276	29,131	33,986	43,697	48,552	53,407	58,262	63,118
40	9,550	14,332	19,109	23,887	28,664	33,442	42,996	47,774	52,551	57,551	62,106
50	9,367	14,054	18,734	23,717	28,101	32,784	42,152	46,835	51,519	56,202	60,886
60	9,187	13,780	18,373	22,960	27,560	32,152	41,330	45,933	50,526	55,119	59,712
70	9,013	13,510	18,026	22,532	27,030	31,545	40,558	45,064	49,574	54,077	58,584
80	8,846	13,268	17,691	22,114	26,537	30,960	39,806	44,228	48,656	53,074	57,497
90	8,684	13,027	17,369	21,711	26,054	30,096	39,080	43,423	47,763	52,107	56,449
100	8,529	12,794	17,058	21,323	25,887	29,859	38,381	42,646	46,911	51,173	55,440
110	8,379	12,569	16,758	20,948	25,138	29,327	37,707	41,896	46,086	50,276	54,463
120	8,236	12,352	16,496	20,586	24,704	28,821	37,055	41,176	45,296	49,407	53,525
130	8,095	12,142	16,189	20,237	24,284	28,392	36,426	40,474	44,521	48,569	52,616
140	7,959	11,939	15,919	19,999	23,870	27,859	35,818	39,793	43,778	47,758	51,738
150	7,829	11,743	15,658	19,572	23,487	27,401	35,230	39,145	43,059	46,978	50,888
160	7,702	11,554	15,405	19,256	23,107	26,958	34,661	38,512	42,363	46,215	50,066
170	7,580	11,370	15,160	18,950	22,740	26,530	34,110	37,900	41,269	45,480	49,270
180	7,461	11,192	14,923	18,653	22,381	26,115	33,576	37,307	41,037	44,768	48,499
190	7,346	11,020	14,693	18,360	22,039	25,712	33,059	36,732	40,405	44,078	47,759
200	7,235	10,852	14,470	18,087	21,705	25,322	32,557	36,173	39,792	43,410	47,027
210	7,127	10,690	14,239	17,817	21,380	24,944	32,070	35,634	39,197	42,761	46,324
212	7,106	10,658	14,211	17,761	21,317	24,869	31,973	35,527	39,080	42,633	46,186

RULE.—Multiply the section area of the shaft by the number of pounds, and strike off the three decimal figures, the remainder will be the weight in pounds, atmospheric pressure, in a shaft of a given depth, and temperature as above described; and will be found sufficiently accurate for practical purposes.—*Mine Inspector's Report.*

VENTILATION CURRENT.

In deep mines artificial ventilation is required for the safe working of the same, while it is necessary and proper that all persons employed in a mine, and more especially in mines that generate noxious gases largely, to have some obvious rule for their guidance and safety as regards fire-damp when mixed with air and how to guard against explosions, besides to know when it is dangerous to use a safety-lamp in certain currents of air. Here we give the rule:

MILES PER HOUR.	Aggregate feet in length	Feet per minute........	Feet per second........
1	5,280	88	1 1-2
1½	7,920	132	2 1-5
2	10,560	176	3
2½	13,200	220	3 2-3
3	15,840	264	4 1-4
3½	18,480	308	5 1-8
4	21,120	352	5 5-6
4½	23,760	396	6 6-10
5	26,400	440	7 1-3
5½	29,040	484	8*
6	31,680	528	8 4-5
6½	34,320	572	9 1-2
7	36,960	616	10 4-15

REMARKS ON LAMP TESTS IN ENGLAND IN 1869.

Where pure carburetted hydrogen gas is evolved an explosion is not imminent, unless the mixture contains from six to twelve times its volume of air. In this state it is imminently dangerous to approach even with the safety lamp, unless the air current is imperceptible. Any concussion that might arise from a sudden fall of rock or coal, striking the lamp with a force of six or eight feet per second, would pass it through the gauze of the lamp and explode it for a certainty, so that any experimenter with a safety lamp should be well informed in the use of the anemometer for first to ascertain the velocity of the air current, and should also understand the use of the barometer in each trial and in all parts of the mine.

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*At 8 feet per second the Davy lamp will explode; the Clanney will at 25 feet.

BAROMETER TESTS.

For barometric tests and the weight and expansion of heated air we give the following in grains per cubic foot and expansion in volume :

DEGREES OF HEAT.	Weight of a cubic foot in grains..	The volume of air at 100 cubic feet..	DEGREES OF HEAT.	Weight of a cubic foot in grains..	The volume of air at 100 cubic feet..
32............	550	At 100	132...........	453	Increases to 121
42............	539	Increases to 102	142...........	446	....do....... 123
52............	529	....do....... 104	152...........	439	....do....... 125
62............	518	....do....... 106	162...........	432	....do....... 127
72............	506	....do....... 109	172...........	426	....do....... 129
82............	495	....do....... 111	182...........	420	....do....... 131
92............	487	....do....... 113	192...........	413	....do....... 133
102............	479	....do....... 115	202...........	407	....do....... 135
112............	470	....do....... 117	*212...........	401	....do....... 137
122............	461	....do....... 119			

Calculations and deductions can be easily made and readily understood by referring to this table for temperatures, degrees of heat and bulk of volume.

Every person connected with mining, and having the management and superintendence of mines and employees, by right ought to thoroughly understand the use of the necessary instruments and the character and condition of the air in circulation, knowing full well that every life under his charge is at any moment subject to danger. He should be a person of good judgment, neither take from the one and give to the other but what is justly due to them ; nor should he exercise any political or religious influence in any manner amongst his men, but *devote* his whole time and attention to the duties of his office. He should be thoroughly conversant with the mining law, and give its benefit to his miners. He should be a person who knew how to manage the colliery and treat with common respect those in his employ, not to be remiss in any part of his duty, or timid in its discharge, neither giving to any one what justly belonged to another ; and where danger to life was clearly imminent then he should not hesitate to sacrifice worldly interest and protect life, for he must remember that his office under trying circumstances is of greater value than any gift earth could bestow.

ATMOSPHERIC EXPERIMENTS.

Careful experiments show that 459 cubic feet of air, at 0° or zero of Fahrenheit, the thermometer indicates 39.76 pounds. When the pressnre is 30 inches of mercury, of a density due to 32°, a pressure equal to 14$\frac{3}{4}$ pounds per square inch, which is the ordinary pressure of the atmosphere, but it only weighs one-thirtieth of this when the pressure is only one inch of mercury. And since 459 cubic feet of air at 0° expand exactly one cubic foot for each degree of heat added, we get the following rule to find the weight of air at any temperature and under any pressure :

---

* Water boils at sea level at 212° Fahrenheit.

Thus,
$$W = \frac{1.3253 \times 1}{459 + 1}$$

Where 1 = the inches height indicated by the barometer, and t = the temperature by the thermometer, at 38°, under a pressure of 30 inches of mercury, 100 cubic feet of air, as per table, weighs just eight pounds. If 225,176 cubic feet of air be produced per minute, the temperature in the downcast to be, say $43\frac{1}{2}$°, and the temperature in the upcast shaft to be 211° by the given rule. If the barometer be taken half way down the shaft, and it to show a pressure of $30\frac{1}{2}$ inches of mercury, the weight of a cubic foot of air, taking the average in a downcast shaft, would be .08044 pounds×900=72,539 pounds upon each square foot by its mere weight, the upcast air being lighter and only produced a pressure of 54,297 pounds per square foot, the difference of pressure in both columns of air is=18,099 pounds. In order to find the horse-power producing ventilation, we require to multiply this difference of pressure (18,099 pounds per square foot) by the number of cubic feet of air produced per minute, and divide the result by 33,000 pounds or horse-power, which in this case will give a ventilating power, thus :

$$\frac{\overset{\text{Lbs.}}{18,099 \times 225,176}}{33,000} = 122\tfrac{1}{2} \text{ horse power.}$$

Much valuable information may be gained from this method of calculation, and from the relation the inside and outside temperatures bear to each other, as when the temperatures are of the same degree of heat natural ventilation will cease, and artificial means must be applied to create a current; and the ventilating currents should be so arranged that each working panel should receive its proper proportion of fresh and pure air without stint, and so well directed up to the working face as to be effective in removing all noxious gases and vitiated air from the working men, and to be there conducted into exit courses to the surface, forced out by steam jet or furnace power, or drawn out by the section or exhaust fan. Upon good ventilation depends the health and safety of the workmen, and no valid reason can be truthfully adduced to excuse defective ventilation. In mines that generate large bodies of gases too strong a current is not so safe. The miner, in exploding a charge where fire-damp exists, should be certain that the locality was free from it, and should use touch-paper only to ignite it, as fire-damp will not, under any circumstances take fire from a spark. Its character in this respect differs from powder, which resists the flame and unites with the spark, but explosive gas will ignite by a flash of powder; and therefore the act of blasting and discharging shots in dangerous air should be attended with great circumspection, and by the best practical men. The custom amongst miners is that each man discharges his own shots, but I am of the opinion it would be much safer on all hands to employ a practical man or two in large extensive collieries for this purpose.

SAFETY LAMP TESTS.

INVENTORS OF SAFETY LAMPS.	Velocity in feet per second...	Number of experiments....	Actual results,
First.			
Davy lamp......	8	4	Exploded.
Stephenson......	8	10	Went out.
Clanny..........	8	5	Went out.
Second.			
Davy............	11½	2	Exploded.
Stephenson......	11½	60	Still burning.
Clanny..........	11½	6	Exploded.
Third.			
Davy............	14	3	Exploded.
Stephenson......	14	5	Went out.
Clanny..........	14	3	Went out.
Fourth.			
Davy...........	19½	3	Exploded.
Stephenson.....	19½	6	Went out.
Clanny.........	19½	3	Went out.
Fifth.			
Davy...........	25	1	Exploded.
Stephenson.....	25	4	Went out.
Clanny.........	25	39	Still burning.
Sixth.			
Davy...........	34½	1	Exploded.
Stephenson.....	34½	4	Exploded.
Clanny.........	34½	15	Still burning.

It will be understood by the foregoing trials that the lamp invented by Sir Humphrey Davy appears to be the most *sensitive* in its construction, and as such has become the favorite lamp with the best practical miners. The others are an excellent article in the hands of non-practical men and serves an excellent purpose.—*Mine Inspector's Report.*

[MINE INSPECTOR'S REPORT.]

A condensed exhibit of fatal casualties in Columbia county collieries during the seven years ending December 31, 1875.

FATAL CASUALTIES.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total.
Falls of coal	1	.....	.....	.....	.....	.....	.....	1
Falls of rocks and top slate	.....	.....	.....	.....	.....	.....	.....	.....
Falls into slopes and shafts	.....	.....	.....	.....	.....	.....	.....	.....
Falls of timber and props	.....	.....	.....	.....	.....	.....	.....	.....
Explosions of fire-damp	.....	.....	.....	1	1	1	.....	
Explosions of powder	4	.....	.....	1	3	.....	.....	8
Explosions of blasts and shots	1	.....	1	1	.....	.....	.....	3
Explosions of steam boilers	.....	.....	.....	.....	1	1	.....	2
Crushed by wagons	.....	1	.....	2	.....	.....	.....	3
Falling off slope and shaft cages	.....	.....	.....	.....	1	.....	.....	1
Breaking of slope and shaft chains,	.....	1	.....	.....	.....	.....	.....	1
Crushed in machinery	.....	.....	.....	.....	.....	.....	.....	.....
Crushed in rollers	.....	.....	.....	.....	.....	.....	.....	.....
Suffocated by noxious gases	.....	.....	.....	.....	.....	.....	.....	.....
Injured by mules	.....	.....	.....	.....	.....	.....	.....	.....
Sundry accidents	1	.....	.....	2	1	.....	.....	4
Total deaths	7	2	1	7	7	2	.....	26
Total maimed and injured	7	8	7	10	12	9	.....	53
Total widows	.....	.....	1	3	1	1	.....	6
Total orphans	.....	.....	4	12	1	4	.....	21
Aggregate	14	10	13	32	21	16	.....	106

A condensed exhibit of fatal casualties in Dauphin county collieries during the seven years ending December 31, 1875.

FATAL CASUALTIES.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total
Falls of coal	3	2	.....	1	.....	1	.....	7
Falls of rocks and top slate	1	.....	.....	4	.....	.....	.....	5
Falls into slopes and shafts	.....	.....	.....	.....	.....	.....	.....	.....
Falls of timber and props	.....	1	.....	.....	.....	.....	.....	1
Explosions of fire-damp	.....	.....	2	.....	1	.....	.....	3
Explosions of powder	.....	.....	.....	.....	.....	.....	.....	.....
Explosions of blasts and shots	.....	.....	.....	.....	2	.....	.....	2
Explosions of steam boilers	.....	1	.....	.....	.....	.....	.....	1
Crushed by wagons	.....	3	1	2	2	.....	.....	8
Falling off slope and shaft cages	.....	.....	.....	.....	1	.....	.....	1
Breaking of slope and shaft chains,	.....	.....	.....	.....	.....	.....	.....	.....
Crushed in machinery	.....	.....	.....	.....	.....	.....	.....	.....
Crushed in rollers	.....	.....	.....	.....	.....	.....	.....	.....
Suffocated by noxious gases	.....	.....	.....	.....	.....	.....	.....	.....
Injured by mules	.....	.....	.....	.....	.....	.....	.....	.....
Sundry accidents	.....	1	.....	1	.....	.....	.....	2
Total deaths	4	8	3	8	6	1	.....	30
Total maimed and injured	6	16	5	13	14	2	.....	56
Total widows	3	1	2	3	1	1	.....	11
Total orphans	10	6	.....	11	6	3	.....	36
Aggregate	23	31	10	35	27	7	.....	133

TABLE NO. 1.—*Middle district of Luzerne and Carbon counties report.—Number of persons killed and injured during the years* 1871–2–3–4–5.

	1871.		1872.		1873.		1874.		1875.		Total.	
	Killed . .	Injured,	Killed . .	Injured,	Killed . .	Injured,	Killed . .	Injured,	Killed . .	Injured,	Killed . .	Injured,
Explosions of fire-damp.........	1	31	8	24	6	14	9	32	6	32	30	133
Falls of coal and bone, rock, &c.												
Falls of coal and bone	11	15	12	23	9	14	14	19	13	13	59	84
Falls of rock.......	2	11	3	10	2	7	3	6	5	6	15	40
Falls of sundries................	....	....	....	....	....	....	....	....	1	1	1	1
	14	57	23	57	17	35	26	57	25	52	105	258
In shafts.												
Falling into shafts from top......	2	1	3	3	3	1	3	3	12	1	23	9
Things falling from top..........	....	....	....	....	....	....	....	....	....	....	....	....
Falling from part way down.....	....	....	....	....	....	....	....	....	2	....	2	....
Things falling from part way down	....	....	....	....	....	....	....	....	....	1	....	1
Sundries in shafts...............	....	....	....	....	....	....	....	....	....	....	....	....
Total in shafts...............	2	1	3	3	3	1	3	3	14	2	25	10
Miscellaneous underground.												
Explosions of powder...........	1	8	....	3	....	1	1	9	2	....	4	21
Crushed by mules..............	....	....	....	....	....	....	....	1	....	3	....	4
Crushed by mine cars............	6	9	7	24	13	27	9	14	5	25	40	99
Crushed by mine locomotives....	....	....	....	....	....	....	....	1	....	....	....	1
By blasts in coal and rock........	....	....	....	....	4	12	4	9	8	14	16	35
Sundries underground..........	24	12	4	27	....	10	7	6	1	....	36	55
Total miscel's underground..	31	29	11	54	17	50	21	40	16	42	96	215
Total underground..........	47	87	37	114	37	86	50	100	55	96	226	483
On surface.												
By machinery....................	....	....	....	....	....	....	1	....	2	2	3	2
Suffocated in shutes in breaker..	....	....	....	....	....	....	1	....	2	....	3	....
Crushed by cars on surface	....	....	....	....	6	2	1	2	2	....	9	4
Crushed by mine locomotives on surface......................	....	....	....	....	....	....	....	....	2	....	2	....
Sundries on surface.............	6	3	3	7	3	3	4	3	....	2	16	18
Total on surface.............	6	3	3	7	9	5	7	5	8	4	33	24
Gross total	53	90	40	121	46	91	57	105	63	100	259	507

The following table shows the quantity of coal sent to market, number of persons employed and the number of lives lost in this district in the year 1871–2–3–4–5, respectively; also the ratio of said production to each person employed; also to each life lost and the ratio of persons employed to each life lost:

TABLE No. 2.—*Coal production, number of persons employed, &c.*

	1871.	1872.	1873.	1874.	1875.	Total.
Coal produced, in tons, per year	3,000,000	3,250,000	4,232,000	4,513,847	4,261,263	19,257.110
Number of persons employed	9,870	9,807	11,325	15,008	13,576	....
Ratio of coal produced, in tons, to each employee	304	331.4	372.6	332.5	284	....
	1871.	**1872.**	**1873.**	**1874.**	**1875.**	**Average.**
Number of lives lost each year	54	40	46	57	63	52
Ratio of coal produced per life lost	56,000	81,560	92,000	80,000	67,629	75,440
Ratio of persons employed per life lost	187.77	233.26	246.84	238.17	238.22	227.85

TABLE OF COMPARISON.

	ENGLAND.		NOVA SCOTIA.	PENNSYLVANIA.		ANTHR'E MINES.
	1873.	1874.	1874.	1872.	1873.	1874.
Coal produced, in tons, per year	128,544,400	140,713,832	872,720	18,932,205	19,585,178	21,516,248
Number of persons employed	514,149	538,829	4,282	63,000	56,405	61,403
Ratio of coal produced, in tons, to each employee	250	261	203.8	300.5	347	350.41
Number of lives lost each year	1,069	1,056	7	223	264	265
Ratio of coal produced per life lost	133,677	133,251	135,063	85,280	86,551	81,198
Ratio of persons employed per life lost	479	510	611	283.8	249.5	231.7

A condensed statement of the number of fatal accidents that occurred in the several mining districts in the anthracite regions during the years 1874 *and* 1875, *including the number of hands employed, the number of collieries operated, the number of tons of coal mined, the number of deaths per tons mined, the number of fatal accidents to the number of hands employed, and likewise the number of non-fatal accidents in the same:*

1874.

NAME OF COUNTIES.	No. of collieries operated	No. of tons of coal mined	No. of hands employed	No. of fatal accidents	No. of tons per each death	No. of deaths per number hands employed	No. of non-fatal accidents
Schuylkill	101	5,157,853	15,030	78	66,126	193	226
Northumberland	35	1,404,070	4,289	16	87,754	268	92
Columbia	8	383,741	1,051	2	191,870	525	8
Dauphin	5	479,915	1,414	8	59,989	177	16
Luzerne, East	97	6,808,057	16,571	69	98,667	240	89
Luzerne, West	96	4,913,984	13,576	57	86,210	238	105
Carbon	41	3,800,043	8,000	33	115,153	242	45
Total	383	22,947,663	59,931	263	....	....	581

1875.

Schuylkill	125	5,000,000	15,223	58	86,207	328	215
Northumberland	30	1,391,327	4,557	23	60,495	305	78
Columbia	12	364,674	1,576	8	43,027	231	7
Dauphin	5	572,710	1,593	3	160,109	365	6
Luzerne, East	......	7,947,861	16,000	62	128,109	497	102
Luzerne, West	......	....	13,500	......	....	....	......
Carbon	41	2,555,888	8,505	21	121,709	405	77

A condensed exhibit of fatal casualties in Northumberland county collieries during the seven years ending December 31, 1875.

FATAL CASUALTIES.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total.
Falls of coal	8	6	9	4	7	5	......	39
Falls of rock and top slate	2	2	1	1	2	2	......	10
Falls into slopes and shafts	......	1	3	......	1	......	......	5
Falls of timber and props	......	1	......	......	1	1	......	3
Explosions of fire-damp	......	4	12	3	1	2	......	22
Explosions of powder	1	......	......	......	......	......	......	1
Explosions of blasts and shots	2	......	1	......	1	......	......	4
Explosions of steam boilers	......	......	......	......	......	......	......	......
Crushed by wagons	7	......	5	......	5	2	......	19
Falling of slope and shaft cages	......	1	......	......	......	......	......	1
Breaking of slope and shaft chains,	2	......	......	......	......	......	......	2
Crushed in machinery	1	......	......	......	1	1	.....	3
Crushed in rolls	.....	......	......	......	......	......	......	......
Suffocated by noxious gases	......	......	......	......	......	......	......	......
Injured by mules	......	......	......	......	......	......	......	......
Sundry accidents	.....	2	1	......	1	1	......	5
Total deaths	23	17	32	8	20	14	......	114
Total maimed and injured	78	92	46	26	54	35	......	331
Total widows	9	6	20	4	8	7	......	54
Total orphans	12	16	42	16	26	26	......	138
Aggregate	122	131	140	54	108	82	......	637

A condensed exhibit of fatal casualties in Schuylkill county collieries during seven years ending December 31, 1875.

FATAL CASUALTIES.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total.
Falls of coal	15	24	37	21	26	37	18	178
Falls of rocks and top slate	8	2	3	4	5	5	2	29
Falls into slopes and shafts	1	4	7	8	6	4	5	35
Falls of timber and props	......	2	1	3	1	1	1	9
Explosions of fire-damp	7	16	10	15	26	8	2	84
Explosions of powder	1	1	1	9	2	1	6	21
Explosions of blasts and shots	......	1	2	......	5	4	2	14
Explosions of steam boilers	3	2	......	......	1	5	......	11
Crushed by wagons	3	7	7	......	8	15	4	44
Falling off slope and shaft cages	2	2	......	2	2	6	5	19
Breaking of slope and shaft chains,	4	4	6	1	3	12	......	30
Crushed in machinery	1	2	6	1	5	......	5	20
Crushed in rollers	4	......	4	2	3	4	1	18
Suffocated by noxious gases	1	......	......	......	......	......	......	1
Injured by mules	......	2	1	......	......	3	......	6
Sundry accidents	8	9	6	3	9	7	5	47
Total deaths	58	78	91	69	102	112	56	566
Total maimed and injured	217	226	321	226	339	252	86	1,667
Total widows	29	36	47	39	57	70	30	308
Total orphans	115	140	183	128	162	250	150	1,128
Aggregate	419	480	642	462	660	684	352	3,669

TABLE No. 1.—*List of deaths reported to the Inspector of the Eastern District of the Wyoming Coal Fields, Luzerne county, State of Pennsylvania, and the cause as shown by his investigation for the year ending 31st day of December, A. D. 1875.*

Date.	Names.	Age	Married or single	Wife	Children	Colliery where accident occurred.	Date of investigation.	Nature or cause of death.
Jan. 11,	Michael Earle	15	....	....	....	Pine Brook colliery	Jan. 11,	Killed instantly whilst trying to sprag a car.
11,	Dominick Boland	28	M.	W.	4	Twin shaft colliery	12,	Killed instantly by a fall of roof.
23,	Edward Hart	48	M.	W.	3	No. 4 shaft colliery	25,	Killed instantly by a fall of top coal.
27,	Thomas Filson	35	M.	W.	3	Central shaft colliery	29,	Seriously injured by a fall of roof. Died five hours after.
29,	Michael Healy	45	M.	W.	5	Everhart colliery	Feb. 2,	Killed instantly by a fall of rock roof.
30,	John M'Kenna	25	M.	W.	1	No. 12 shaft colliery	1,	Killed instantly by a fall of top coal.
Feb. 5,	Valentine Phillips	40	M.	W.	3	Meadow Brook colliery	10,	Severely burned by an explosion of powder, from the effects of which he died two days after.
10,	Richard Gill	29	S.	....	....	Shaft, No. 10, Pittston	12,	Killed instantly by a fall of roof.
25,	John Hull	25	M.	W.	....	Continental colliery	27.	Seriously injured ; received a large scalp wound from a fall of rock. Died next day.
27,	Patrick O'Hara	17	....	....	....	No. 4 colliery, Pittston	Mar. 2,	Killed by falling over a trestleing whilst playing with some boys.
Mar. 4,	Thomas Maher	16	....	....	....	Continental colliery	5,	Seriously injured by the culm car pin breaking in the rear of the car, letting the car dump, which caught his head on the rail, fracturing his skull. He died next morning.
9,	Henry Walsh	16	....	....	....	Mount Pleasant colliery	10,	Killed by being caught in the screens.
9,	John Owens	16	....	....	....	do. do.	10,	Kill by being caught in the screens whilst rescuing the former.
10,	Peter Gallagher	53	M.	W.	7	Hampton colliery	12,	Killed by an explosion of a blast.
11,	Martin Feeny	45	M.	W.	8	Dodge colliery	12,	Seriously injured by a fall of roof, from the effects of which he died 3 days after.
16,	John Moran	40	M.	W.	7	Von Storch colliery	18,	Killed by a fall of roof.
23,	James Smith	19	....	....	....	Everhart colliery	24,	Killed by being run over by a large railroad car.
25,	John Nicholas	38	M.	W.	5	Meadow Brook colliery	29,	Seriously injured by a fall of blacksmith coal. Died April 1.
31,	John Scoonover	50	M.	W.	4	Green Ridge colliery	April 1,	Seriously injured by a fall of roof, from the effects of which he died twelve hours after.
Apr. 19,	John Narry	40	M.	W.	5	Von Storch colliery	21,	Killed by a fall of top coal.
22,	Anthony Kinny,	25	M.	W.	2	Tompkins colliery	24, May 1	Killed by a fall of rock.
24,	Martin M'Tighe	48	M.	W.	6	Butler shaft colliery	Apr. 26,	Killed by a fall of top coal.
May 6,	Michael Coolican	21	S.	....	....	Eaton & Co's. colliery	May 7,	Killed by a fall of top coal.
15,	John John	24	M.	W.	1	Von Storch colliery, Diamond vein	16,	Killed instantly by going back to his chamber too quick after lighting his match.
22,	Thomas Evans	24	S.	....	....	Scranton Coal Company's mine	24.	Seriously injured by falling down an air-shaft that is now being sunk. Died two hours after.
June 5,	Jacob Morgan	18	S.	....	....	Central shaft	June 7,	Seriously injured by a permature blast, from the effects of which he died two hours after.
7,	John D. Murphy	35	M.	W.	....	Eddy Creek shaft	12,	Seriously injured by a permature blast, from the effects of which he died next day.
7,	Anthony Walsh	48	M.	W.	5	Stark shaft	8,	Killed instantly by a permature blast.
7,	Wm. James.	14	S.	....	....	Sloan shaft	7,	Seriously injured by a trip of cars running over him, from the effect of which he died ten hours after.
12,	John Hughes	45	M.	W.	....	Cayuga shaft	14,	Killed by a fall of top coal.
25,	Dennis Costello	26	S.	....	....	No. 12 shaft, Pleasant Valley	25,	Killed by a fall of roof.
July 2,	Patrick Diskin	35	M.	W.	4	Dodge Colliery	July 3,	Killed by a fall of roof.
15,	John Kelly	20	S.	....	....	Powderly slope	17,	Arm badly broken by a fall of roof, from the effect of which he died on the 24th.
17,	Edward Barrett	25	M.	W.	1	No. 10 shaft, 7-foot vein	19,	Seriously injured by a fall of top coal, from the effect of which he died eleven hours after.

July 19,	Michael Kilhoran	45	Wr	....	1	Cayuga shaft	July 21,	Seriously injured by a fall of roof, from the effects of which he died two hours after.
23,	David J. Evans	....	....	....	....	Mount Pleasant	22 & 23,	Killed by an explosion of fire-damp.
30,	Michael Swift	18	....	....	....	White Oak colliery	31,	Killed by a run-away trip of cars in the mines.
Aug. 2,	Patrick Nooman	27	M.	W.	3	Butler colliery	Aug. 4,	Seriously injured by a fall of slate, from the effects of which he died on the 16th.
6,	Patrick Cook	26	S.	....	....	White Oak colliery	7,	Killed by a fall of top coal.
14,	Evan Davis	21	S.	....	....	Mount Pleasant colliery	14,	Killed by a run-away car on the slope.
14,	David Owens	19	S.	....	....	do do	14,	Killed by a run-away car on the slope.
14,	Thomas Sturrett	16	....	....	....	do do	14,	Killed by a run-away car on the slope.
17,	John M. Kennedy	58	M.	W.	....	Valley Tunnel colliery	18,	Seriously injured by a piece of coal from a blast, from the effects of which he died.
Sept. 4,	Anthony Farrell	15	S.	....	....	Erie colliery	Sept. 6,	Killed by getting his head caught between the bumpers of two cars.
11,	Bartholomew Mulligan	35	S.	....	....	do	13,	Killed by a fall of top coal.
18,	Dominick M'Andrew	30	M.	W.	3	Stark colliery	20,	Killed by a permature blast. } Both killed by same blast.
18,	David Bourk	30	M.	W.	1	do	20,	Killed by a permature blast. } Both killed by same blast.
Oct. 12,	John O'Connor	19	M.	W.	....	Central shaft colliery	18,	Injured by a car running off the track. Not supposed serious when it first occurred, as it was only a flesh wound, but mortification set in, causing his death on the 19th.
19,	Benjamin Jones	15	S.	....	....	Tripp's slope	20,	Killed by a run-away car coming down the slope, caused by chain breaking, killing him.
29,	Wm. R. Price	54	M.	W.	4	Pine Brook shaft	29,	Killed by a blast set off by himself.
30,	Philip Murray	17	S.	....	....	No. 10 shaft	Nov. 1,	Seriously injured by getting hit by a piece of coal from a blast. Died seven hours after
Nov. 1,	Thomas Henshall	55	M.	W.	4	No. 7 shaft	1,	Killed instantly by a fall of roof.
10,	Thomas Manghan	23	S.	....	...	No. 5 shaft	10,	Killed by a fall of black rock roof.
25,	John Berry	30	M.	W.	1	Leggett's Creek	27,	Seriously injured by a fall of coal whilst mining out a blast. Died eleven hours after.
26,	Michael Eagen	30	M.	W.	2	No. 10 shaft, Pittston	28,	Killed by a fall of rock roof.
Dec. 8,	Wm. Lynott	50	M.	W.	6	No. 9 shaft, Pittston	Dec. 8,	Seriously injured by an explosion of fire-damp, from the effect of which he died 24 hours after.
13,	James M'Kenzie	60	M.	W.	3	Law shaft	14,	Killed by an explosion of fire-damp.
13,	Michael Corby	55	M.	W.	....	Diamond shaft	15,	Killed by being caught in the pony rolls.
22,	John E. Cosgrove	39	M.	W.	6	Tompkins colliery	24,	Killed by a fall of bony coal roof.
24,	Noah Morgan	72	M.	W.	....	Mount Pleasant	24,	Killed by getting hit by a rail on the outside plane.
28,	Daniel M'Collough	50	M.	W.	10	Hampton	28,	Killed whilst looking down the shaft by a descending carriage.
29,	John Moran	16	....	....	....	Phœnix	30,	Seriously injured by being caught between two cars. Died three hours after.

Deaths	62
Widows	36
Orphans	118

Killed by cars	12
Blasts	10
Falls of roof	18
Falls of coal	11
Powder explosion	1
Falling of trestle	1
Caught in screens	2
Falling down shaft	1
Explosion of fire-damp	3
Pony rolls	1
Getting hit by a rail	1
Getting hit by a carriage	1
	62

There was one death to every .... 128,330 tons of coal mined.
There was one widow to every .... 221,012 " "
There was one orphan to every .... 67,428 " "

A statement of the non-fatal accidents in and about the collieries of the three districts in the year 1875.

CHARACTER OF INJURIES.	Pottsv'lle	Shenan-doah...	Shamo-kin....	Total....
Injured from falls of coal	18	54	47	119
Falls of rocks and slate	1	6	15	22
Falls into slopes and shafts	.....	3	5	8
Falls of timber and props	2	1	3	6
Explosions of gases	28	15	2	45
Explosions of powder	3	2	6	11
Explosions of blasts	5	4	9	18
Explosions of boilers	1	1	.....	2
Injured by wagons	11	18	11	40
Suffocations	.....	1	2	3
Falling off cages	.....	.....	.....	.....
Broken ropes and chains	4	2	2	8
In machinery	2	1	.....	3
In rollers	1	.....	.....	1
By drills and tools	1	1	1	3
By fall of planks	1	1	.....	2
Cut by axes	1	.....	.....	1
Falls of trestleing	.....	1	.....	1
Flooding of mine	.....	.....	2	2
Vicious animals	.....	1	.....	1
Miscellaneous cases	9	2	1	12
Totals	88	114	106	308
To September 22	42	76	77	195
From September 22, to December 31	46	38	29	113
Totals	88	114	106	308
Of this number died of their injuries	5	3	3	11

A statement of the character of the injuries sustained by persons employed in and about the collieries of the respective districts during the year ending December 31, 1875.

CHARACTER OF INJURIES RECEIVED AND NUMBER OF MAIMED PRISONERS.	Pottsville district..	Shen'doah district..	Shamokin district..
11 persons had their heads crushed	4	3	4
2 persons had their backs broken	1		1
17 persons had each an arm broken	2	12	3
1 person had both his arms broken	1		
31 persons had each a leg broken	5	13	13
2 persons had each an arm cut off	1	1	
1 person had both legs cut off	1		
3 persons had a leg cut off		1	2
3 persons had their fingers cut off		3	
1 person had his toes cut off	1		
3 persons had their sides crushed in		3	
3 persons had their shoulders crushed	1	2	
12 persons had their hands crushed and injured	2	4	6
13 persons had their feet crushed and injured	1	2	10
5 persons had their bodies crushed and injured	1	3	1
3 persons had their thighs broken	1	2	
1 person had his hand cut off by coal		1	
4 persons had lost an eye each		2	2
3 persons had their hips broken	1		2
	23	52	44

119 persons were maimed during life; 189 others were severely injured, making in all 308 cases, injuries not resulting in death, against 342 cases of a like character last year, or 43 less. The collieries of Schuylkill county very generally were idle from the 9th of December, 1874, to the 23d of June, 1875.

POTTSVILLE DISTRICT CASUALTIES AND CHARACTER OF THE FATALITIES.

Twenty-eight fatal accidents occurred in and about the collieries of this district during the year; but since the 22d of September last the district had been increased by the addition to it of New Boston basin collieries, and all collieries now west of the West Branch of the Schuylkill river and south of Broad mountain, in Schuylkill county, except Brookside colliery; it extends from Carbon county to Dauphin county line, and is 38 miles in extent.

CHARACTER OF THESE FATALITIES.

5 persons lost their lives by falls of coal.
3 ......do........do.....falls of rock and slate.
7 ......do........do.....explosions of fire-damp.
1 person lost his life by....explosion of powder.
1 ......do ....do.....explosion of a blast.
1 ......do........do.....being crushed by wagons.

3 persons lost their lives by breaking of slope chain.
2 ......do........do.....falling into slopes and shafts, &c.
2 ......do........do.....falling of cages.
1 person lost his life by....being crushed in machinery.
1 ......do........do.....being crushed by trestleing.
1 ......do........do.....hemorrhage.

28 persons came to their death by the above accidents, leaving 17 widows and 62 orphans, and 88 non-fatal accidents.

SHENANDOAH DISTRICT CASUALTIES AND THEIR CHARACTER.

Twenty-six fatal accidents occurred in this district during the year; but since the 22d of September the district was divided, and all the collieries situated west of the eastern limit of Girardsville and north of Broad mountain, in Schuylkill county, and all the collieries in Columbia county, were cut off and the same added to Shamokin district, which accounts for the increase in fatal casualties in the Shamokin district this year.

CHARACTER OF THESE FATALITIES.

8 persons lost their lives by falls of coal.
3......do........do.....falls of rock and slate.
1 person lost his life by....breaking of ropes and chains.
1 ......do........do.....falling into slopes and shafts.
3 persons lost their lives by explosions of boilers.
3 ......do........do.....being crushed in the rollers.
2 ......do........do.....being crushed in machinery.
2 ......do........do.....falling into open breasts.
1 person lost his life by....an explosion of fire-damp.
1 ......do........do.....being crushed by wagons.
1 ......do.

26 persons came to their death from the above causes, leaving 11 widows and 49 orphans, and 114 persons were maimed and injured.

SHAMOKIN DISTRICT CASUALTIES AND THEIR FATAL CHARACTER.

Thirty-eight persons came to their deaths in this district during the year; but since the 22d of September last the district has been re-formed. At present it comprises all the collieries in Schuylkill county north of the Broad mountain and east of the eastern boundry line of the borough of Girardsville, together with all the collieries in Columbia, Northumberland and Dauphin counties, and the Brookside colliery, in western Schuylkill.

CHARACTER OF THESE FATALITIES.

14 persons lost their lives by falls of coal.
5 ......do........do..... falls of rocks and slate.
5 ......do........do..... explosions of powder.
2 ......do........do..... explosions of blasts.
6 ......do........do..... being crushed by wagons.
2 ......do........do..... breaking of chains.
2 ......do........do..... being crushed in machinery.
1 person lost his life by falling into the rollers.
1 ......do........do..... an explosion of fire-damp.

38 cases of fatal accidents occurred in this new district during the year, leaving 13 widows and 30 orphans, and 106 non-fatal accidents, 49 of which were maimed for life.

County casualties condensed for the seven years ending December 31, 1875.

YEARS..	SCUYLKILL.				NORTHUMBER-LAND.				COLUMBIA.				DAUPHIN.				Total.........
	Killed..	Maimed,	Widows,	Orphans,	Killed..	Maimed,	Widows,	Orphans,	Killed..	Maimed,	Widows,	Orphans,	Killed..	Maimed,	Widows,	Orphans,	
1869...	56	86	30	150	....	....	....	....	....	....	....	....	....	....	....	....	322
1870...	112	252	70	250	14	35	7	26	2	9	1	4	1	2	1	3	789
1871...	102	339	57	162	20	54	8	26	7	12	1	1	6	14	1	6	816
1872...	69	226	39	128	8	26	4	16	7	10	3	12	8	13	3	11	583
1873...	91	321	47	183	32	46	20	42	1	7	1	4	3	5	2	....	805
1874...	78	226	36	140	16	92	6	16	2	8	....	....	8	16	1	6	651
1875...	58	215	29	115	23	78	9	16	8	7	....	....	3	6	3	10	580
Total,	566	1,665	308	1,128	113	331	54	142	27	53	6	21	29	56	11	36	4,546
To this number add slight injuries..........																	90
																	4,636

The above exhibit will show the number of fatal and injured accidents and the number of widows and orphans in the different counties caused by mine accidents for the seven years ending December 31, 1875.

Tonnage of Northumberland County Collieries in 1875.

NAME OF COLLIERY.	OPERATORS.	TONNAGE.
1. Cameron	Mineral Railroad and Mining Co.	270,199
2. Big Mountain	Patterson & Llewellyn	198,135
3. Buck Ridge	May & Audenreid	110,237
4. Burnside	Isaac May & Co.	108,521
5. Luke Fidler	Mineral Railroad Company	103,801
6. Bear Valley	Heim & Goodwill	91,977
7. Henry Clay	Langdon & Co	85,945
8. Trevorton	P. and R. Coal and Iron Company	76,420
9. Hickory Swamp	Mineral Railroad Company	70,520
10. Enterprise	Enterprise Coal Company	52,665
11. Monitor	G. W. Johns	48,856
12. Ben. Franklin	Douty & Baumgarden	46,905
13. Stewartville	Wm. Mortelius	44,694
14. Excelsior	Excelsior Mining Company	43,463
15. Reliance	Reliance Coal Company	38,920
16. George Fales	Heim & Goodwell	32,577
17. Locust Spring	P. and R. Coal and Iron Company	31,750
18. Lancaster	Smith & Keiser	24,954
19. Alaska Shaft	P. and R. Coal and Iron Company	21,393
20. Morton	Thomas Morton	20,804
21. Greenback	Guiteman & Gorman	20,377
22. Hickory Ridge	Mineral Railroad Company	18,940
23. Locust Gap	Græber & Kimble	18,831
24. Helfenstine	P. and R. Coal and Iron Company	15,974
25. Coal Ridge	Burton & Bro's	12,411
26. Franklin	Lovel, Booth & Elms	10,667
27. Black Diamond	Schwenk & Co.	5,338
28. Marshall	Reese & Bro's	2,912
29. Royal Oak	Tillet & Bro	800
30. Lambert	Wm. Brown	170
Thirty collieries	Aggregate tonnage	1,629,156
Estimated local consumption		70,000
		1,699,156
A gain over 1874 of		407,606

There is one fatal accident to each 73,876 tons of coal that was mined in the county in 1875.

Tonnage of Columbia County Collieries in 1875.

NAME OF COLLIERIES.	LOCATION OF COLLIERIES.	REMARKS.	GROSS TONNAGE.
Coal Ridge		1 slope	12,411
Reno		1 slope	1,000
Mariam	Locustdale	1 slope	86,630
Locustdale	do	2 slopes	40,910
Locust Run	Ashland	1 slope	43,053
Centralia	Centralia	1 inundated	....
Centralia out-crop	do	1 drift	11,000
Hazledell	do	1 slope	21,000
Continental	do	1 slope	48,861
Union, No. 2	do	1 slope, 1 drift	56,469
Red Ash tunnel	do	1 tunnel	1,000
Bryson's drift	do	1 drift	340
Twelve collieries shipped the following tonnage			322,674
And local consumption of same			42,000
Aggregate tonnage of Columbia county collieries			364,674

There is one fatal accident to each 52,096 tons of coal mined in the county in 1875.

Tonnage of Dauphin county collieries in 1875.

NAME OF COLLIERIES.	Location of collieries.	Remarks.	Gross tonnage.
Big Lick	Lykenstown	1 slope	76,428
Williamstown	Williamstown	3 slopes, 1 tunnel	315,714
Short Mountain	Wiconisco	1 slope	173,694
Big Run Gap	Gratztown	2 drifts	3,345
Northside	Gratztown	1 drift	3,529
Aggregate tonnage of Dauphin county collieries			572,710

There is one fatal accident to each 143,177 tons of coal mined in the county in 1875.

COAL TONNAGE OF SCHUYLKILL COUNTY IN 1875.

By a return of tonnage of 85 collieries, there has been transported to market 3,119,607 tons. Thirty-five collieries made no returns so far; we estimate 1,284,544 tons=4,404,151 tons. Coal consumed in county, 595,849 tons, which figures will approximate to the actual number of tons of coal mined in the county—or say, in round numbers, 5,000,000 tons.

The number of fatal casualties in the county this year was 58, which will give one fatal accident for each 86,207 tons mined. There are three collieries whose tonnages had been consolidated with the old collieries, giving the actual number of active collieries in the county in 1875, as 123 against 112 in 1874.

Anthracite coal mined in the region, showing the amount marketed and consumed in the several counties during the four years ending December 31, *A. D.* 1875, *to wit:*

1872.

	Marketed.	Local.	Total tons.
Schuylkill	4,135,908	875,000	5,000,908
Northumberland	1,221,327	170,000	1,391,327
Columbia	319,220	25,000	344,220
Dauphin	450,328	30,000	480,328
Luzerne	9,194,808	1,500,000	10,694,808
Carbon	3,610,674	500,000	4,110,674
	18,932,265	3,100,000	22,032,265

1873.

	Marketed.	Local.	Total tons.
Schuylkill	4,252,043	880,000	5,132,043
Northumberland	1,234,070	170,000	1,404,070
Columbia	358,741	25,000	383,741
Dauphin	449,915	30,000	479,915
Luzerne	10,047,241	1,675,000	11,722,241
Carbon	3,243,168	463,000	3,706,168
	19,585,178	3,243,000	22,828,178

1874.

Schuylkill			4,037,435
Northumberland			1,221,551
Columbia			264,476
Dauphin			453,356
Luzerne			9,335,702
Carbon			3,237,043
			18,549,563

1875.

Schuylkill	4,404,151	595,849	5,000,000
Northumberland	1,629,156	70,000	1,699,156
Columbia	322,674	42,000	364,674
Dauphin	572,710	30,000	602,710
Luzerne, East	7,947,861		
Luzerne, West	5,800,000	872,333	14,620,194
Carbon	2,323,536	232,352	2,555,888
Grand aggregate	22,000,088	1,842,534	24,842,622

Anthracite Region Casualties by Counties in 1875.

	Deaths.	Maimed.	Widows.	Orphans.	Total.
Schuylkill	58	215	29	115	417
Northumberland	23	78	9	16	126
Columbia	8	7			15
Dauphin	3	6	3	10	22
Luzerne, East	62	102	30	118	212
Luzerne, West					
Carbon	21	77			

A Condensed Statement of the Collieries of the Schuylkill district, giving their number, casualties, power and capacity.—[Mine Inspector's Report.]

REMARKS.	1875.	1874.	1873.
Number of collieries in the district	175	171	176
Official visits of inspection made	556	1,065	774
Miles traveled on official duty	12,377	13,988	12,415
Men employed at the collieries	20,902	17,795	15,701
Boys employed at the collieries	7,355	5,460	4,829
Total force employed at the collieries	28,257	23,255	20,530
Deaths during the year	92	104	126
Maimed and injured during the year	308	345	379
Widows of miners	41	53	74
Orphans of miners	141	180	273
Slopes in operation	155	162	143
Shafts in operation	22	17	18
Drifts in operation	141	130	150
Tunnels in operation	....	72	....
Miles of track in use	318	313	....
Breasts of coal worked	....	2,738	....
Steam engines in use	665	695	692
Horse power of the engines	44,444	39,618	41,316
Ventilating steam fans in use	116	112	100
Horse power of fans	860	2,650	....
Pumps in use	....	175	....
Horse power of pumps	....	18,224	....
Steam boilers in use	1,696	1,654	1,613
Explosions of fire-damp	27	44	58
Explosions of powder and blasts	27	17	26
Explosions of steam boilers	2	3	3

County Statistics for 1875 *and* 1874.

REMARKS.	Schuylkill county.		Northumberl'd county.		Columbia county.		Dauphin county.	
	1875.	1874.	1875.	1874.	1875.	1874.	1875.	1874.
Collieries	175	130	....	39	8	6	5	5
Visits made	544	560	....	424	....	24	......	18
Mileage	11,970	9,696	....	2,802	....	160	......	720
Men employed	....	11,234	....	3,240	....	836	......	1,111
Boys employed	....	3,796	....	1,049	....	215	......	303
Total force employed	....	15,030	....	4,216	....	1,051	......	1,414
Deaths	58	78	23	16	8	2	3	8
Maimed	217	236	....	92	7	8	6	16
Widows	29	36	....	6	....	....	3	1
Orphans	115	140	....	16	....	....	10	6
Slopes	....	118	....	28	....	8	......	9
Shafts	....	13	....	2	....	1	......	......
Drifts	....	72	....	49	....	2	......	2
Tunnels	....	59	....	25	....	2	......	2
Railroad track	....	198	....	122	....	9	......	20
Breasts of coal	....	1,961	....	595	....	62	......	81
Steam engines	....	537	....	99	....	33	......	31
Horse power	....	30,207	....	2,309	....	2,359	......	2,492
Ventilating fans	....	88	....	9	....	5	......	4
Horse power	....	2,151	....	307	....	100	......	87
All pumps	....	132	....	27	....	10	......	9
Horse power	....	14,446	....	2,238	....	1,316	......	1,340
Steam boilers	....	11,094	....	285	....	92	......	83
Explosions of gas	....	38	....	4	....	....	......	1
Explosions of powder and blasts	....	8	....	4	....	1	......	[illegible]
Explosions of steam boilers	2	2	....	....	....	....	......	......

Recapitulation of colliery power, force employed, and the coal tonnage mined during the year 1875.—[*Mine Inspector's Report*]

REMARKS.	Pottsville district.	Shenandoah district.	Shamokin district.
Number of collieries	59 actives.	54 active.	62 active.
Number of slopes	53 slopes.	55 active.	47 active.
Number of shafts	9	10 active.	3 active.
Number of drifts and tunnels	13	48 active.	80 active.
Number of engines	237	277 active.	151 active.
Number of power of same	19,231	14,257 active.	10,956 active.
Number of steam fans	37	43 active.	36 & 7 furnaces
Number of boilers	556	548 active.	592 active.
Number of men employed	6,437	7,176 active.	7,289 active.
Number of boys employed	2,209	2,850 active.	2,296 active.
Total hands employed	8,646	10,026 active.	9,585 active.
Number of visits made	296	178	186
Number of miles traveled	3,827	3,382	5,168
Number of fatalities	28	26	38
Number of non-fatalities	88	114	106
Number of tons of coal mined	3,853,629	3,000,179	3,388,726
Number of widows	17	11	13
Number of orphans	62	30	49
Number of explosions of gas	17	7	3
Number of explosions of powder	14	10	3
Number of steam boilers	....	1	....

District Colliery Statistics for 1875 *and* 1874.

REMARKS.	Pottsville district.		Shenandoah district.		Shamokin district.	
	1875.	1874.	1875.	1874.	1875.	1874.
Number of collieries worked	59	48	54	70	62	53
Visits of inspection	296	386	178	210	186	469
Miles traveled	3,827	4,630	3,382	4,076	5,168	5,282
Men employed	6,437	3,434	7,176	8,695	7,289	5,666
Boys employed	2,209	1,228	2,850	2,367	2,296	1,869
Hands total	8,646	4,662	10,026	11,062	9,585	7,535
Deaths	28	35	26	44	38	26
Maimed persons	88	100	114	95	106	150
Widows	17	14	11	20	13	19
Orphans	62	65	49	71	30	49
Slopes in operation	53	44	55	76	47	42
Shafts in operation	9	5	10	7	3	5
Drifts and tunnels in operation	13	18	48	52	80	60
Tunnels in operation	....	12	....	37	....	23
Miles of track used	48	49	....	129	....	135
Coal breasts worked	....	503	....	1,411	....	824
Steam engines	237	157	277	356	151	182
Their horse power	19,231	11,631	14,257	17,542	10,956	10,445
Fans for ventilation	37	22	43	59	36	31
Their power	....	506	....	1,500	....	644
Pumps, all sorts	....	38	....	76	60	61
Their power	....	4,811	....	8,860	....	4,553
Steam boilers in use	556	346	548	794	592	514
Explosions in gas	17	28	7	7	3	9
Explosions of powder and blasts	14	2	10	5	3	10
Explosions of steam boilers	....	1	1	2	....	....

STATEMENT OF SECOND DISTRICT COLLIERIES.

Recapitulation of the collieries of Shenandoah district, showing their shipments, the power and force employed, the number of fatal and non-fatal accidents that occurred during the year, to wit:

There are 47 slopes, 10 shafts and 48 drifts in operation, 1,470 breasts of coal are worked, 277 steam engines with 548 steam boilers are in use, 43 steam fans of 866 horse power are in use for ventilating the collieries; 7,176 men and 2,850 boys=10,026 hands are employed—868 mules and 3,297 wagons are in use; 26 fatal and 114 non-fatal accidents occurred, leaving 11 widows and 49 orphans. 2,520,179 tons of coal had been sent to market, and 480,000 tons had been locally used, making an aggregate of 3,000,179 tons of coal mined; making one fatal accident for every 116,319 tons mined, and one fatal accident for every 385 persons employed.

PRICES IN DOLLARS OF ANTHRACITE COAL FOR FIFTY YEARS, FROM 1826 TO 1875.

Prices of Schuylkill White Ash Lump Coal, by the cargo, at Philadelphia. Averaged monthly from mean of weekly quotations. Tons of 2,240 lbs.

Compiled for the American Iron and Steel Association.

YEAR.	January.....	February....	March.......	April........	May.........	June........	July	August......	September..	October......	November ..	December...	Average for year.........
1826	......	......	......	$7 00	$7 00	$7 00	$7 00	$7 00	$7 00	$7 00	$7 50	$7 80	......
1827	$7 00	$7 00	7 00	7 00	......	......	......	......	......	......	......	......	......
1829	......	......	......	......	......	......	......	......	......	7 50	7 50	*7 25	......
1830	*7 25	*7 25	*6 00	*5 75	5 75	5 75	5 75	5 75	5 75	5 75	......	......	......
1833	......	......	6 00	5 50	5 25	5 25	5 25	5 25	5 17½	4 87½	4 87½	4 87½	......
1834	4 87	4 87	4 87	4 87	4 87	4 87	4 87	4 87	4 87	4 87	4 87	4 50	4 84
1835	4 56	4 56	4 56	4 56	4 60	4 63	4 63	4 68	4 88	4 90	5 03	6 47	4 84
1836	7 70	7 44	7 31	6 58	5 38	5 50	5 50	6 19	6 41	6 50	7 13	8 05	6 64
1837	8 25	*8 25	8 04	6 78	6 50	6 38	6 10	6 00	6 00	6 09	6 13	6 13	*6 72
1838	6 13	5 91	5 28	5 25	5 16	5 13	5 13	5 13	5 10	5 00	5 00	5 00	5 27
1839	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	6 00
1840	5 00	5 00	5 00	5 00	5 00	4 63	4 63	4 63	4 66	4 95	5 06	5 34	4 91
1841	6 40	7 00	6 44	5 88	5 69	5 17	5 13	5 27	5 56	5 63	5 63	5 63	5 79
1842	5 63	5 56	5 06	4 38	4 03	3 88	3 83	3 60	3 56	3 51	3 56	3 56	4 18
1843	*3 50	*3 25	*3 25	3 25	3 25	3 25	3 25	*3 25	3 25	*3 25	3 25	3 25	*3 27
1844	3 50	3 33	3 10	3 02	3 00	3 03	3 13	3 21	3 26	3 26	3 27	3 26	‖3 20
1845	3 26	3 26	3 27	3 31	3 31	3 31	3 44	3 44	3 59	3 74	3 76	3 81	3 46
1846	3 81	3 75	3 72	3 84	3 87	3 97	4 00	*3 94	3 96	3 88	4 00	*4 00	*3 90
1847	3 88	3 81	3 81	3 81	3 60	3 63	3 69	3 83	3 95	3 88	3 88	3 88	3 80
1848	3 90	3 90	3 58	3 44	3 37	3 29	3 33	3 56	3 46	3 41	3 39	3 36	3 50
1849	3 36	3 36	3 45	3 62	3 62	3 86	3 88	3 81	3 75	3 69	3 57	3 50	3 62
1850	3 50	3 50	3 40	3 31	3 25	3 25	3 25	3 25	†4 25	4 25	4 25	4 25	3 64
1851	4 28	4 13	3 56	3 31	3 10	3 00	3 00	3 05	3 17	3 20	3 25	3 00	3 34
1852	3 18	3 47	3 40	3 44	3 44	3 45	3 45	3 50	3 56	3 56	3 56	3 50	3 46
1853	3 42	3 44	3 45	3 47	3 47	3 47	3 47	3 64	4 03	4 19	4 19	4 10	3 70
1854	4 50	4 50	4 25	4 39	4 81	5 16	5 55	6 00	6 00	5 81	5 68	5 60	5 19
1855	5 60	5 28	4 53	4 50	4 50	4 45	4 28	4 19	4 19	4 19	4 15	4 06	4 49

1856	4 06	4 25	4 25	4 25	4 05	4 00	4 00	4 00	4 12	4 13	4 10	4 08	4 11
1857	3 92	3 92	3 92	3 89	3 85	3 85	3 88	3 87	3 85	3 82	3 82	3 82	3 87
1858	3 83	3 83	3 77	3 47	3 22	3 23	3 35	3 25	3 32	3 32	3 32	3 30	3 43
1859	3 28	3 38	3 34	3 20	3 20	3 20	3 20	3 20	3 19	3 20	3 34	3 29	3 25
1860	3 28	3 29	3 30	3 30	3 23	3 31	3 36	3 39	3 50	3 53	3 62	3 63	3 40
1861	3 63	3 63	3 50	3 24	3 23	3 29	3 37	3 40	3 35	3 33	3 33	3 33	3 39
1862	3 33	3 33	3 11	‡2 78	‡2 78	3 64	4 58	4 85	4 98	5 22	5 50	5 63	4 14
1863	5 38	5 25	4 63	4 75	5 50	5 80	6 25	6 50	6 75	7 25	7 50	7 13	6 06
1864	7 10	6 75	6 59	7 20	7 88	8 34	9 78	§10 75	10 13	8 90	8 88	8 38	¶8 39
1865	8 38	8 38	8 63	8 10	6 75	6 25	6 03	6 50	8 32	9 93	8 81	8 25	7 86
1866	7 94	7 75	5 40	5 25	5 13	5 53	5 88	5 68	5 47	5 34	5 25	5 05	5 80
1867	5 06	5 06	4 47	4 50	4 44	4 38	4 28	4 07	4 09	4 01	4 00	4 00	4 37
1868	4 00	3 13	3 13	3 22	3 25	3 25	3 25	3 25	4 10	4 50	5 22	6 00	3 86
1869	5 15	5 01	4 15	3 81	3 90	5 00	6 59	7 17	6 15	6 00	5 87	5 12	5 31
1870	5 07	4 79	4 79	4 50	4 50	4 44	4 31	4 44	4 33	4 19	3 69	3 55	4 39
1871	4 05	**	**	**	**	4 52	4 45	4 25	4 35	4 68	4 72	4 63	4 46
1872	4 63	3 78	3 50	3 50	3 50	3 50	3 50	3 59	3 71	3 90	3 90	3 90	3 74
1873	3 90	3 90	4 00	4 00	4 10	4 20	4 40	4 40	4 50	4 60	4 60	4 60	4 27
1874	††	††	4 05	4 10	4 20	4 30	4 45	4 60	4 75	4 90	5 05	5 05	4 55
1875	‡‡	‡‡	4 10	4 10	4 10	4 40	4 50	4 50	4 55	4 55	4 55	4 55	4 39

Prices of Lehigh Coal in Philadelphia.—(From Grotjan's *Public Sale Report.*) 1822, May to December, $8 40. 1823, January to August, $10; September, $9 50; October to December, $8 40. 1824, January to April, $8 40.

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* Uncertain.

† Rise due to freshet.

‡ Lowest average for month, $2 78—April and May, 1862.

§ Highest average for month, $10 75—August, 1864.

‖ Lowest average for year, $3 20—1844.

¶ Highest average for year, $8 39—1864.

** Owing to the long strike, there was no coal in first hands for sale during these months.

†† No sales made in Philadelphia.

‡‡ Miners' strike; no sales.

THE ANTHRACITE COAL TRADE OF PENNSYLVANIA, FROM ITS COMMENCEMENT (SHIPMENTS ONLY.)—TONS OF 2,240lbs.

The total production in each year has been very slightly in excess of the quantity shipped—prepared by P. W. Sheaffer, engineer and geologist, Pottsville, Pa.

YEAR.	Lehigh. Tons.	Schuylkill. Tons.	Wyoming. Tons.	Total. Tons.
1820	365	....	....	365
1821	1,073	....	....	1,073
1822	2,240	1,480	....	3,720
1823	5,823	1,128	....	6,951
1824	9,541	1,567	....	11,108
1825	28,393	6,500	....	34,893
1826	31,280	16,767	....	48,047
1827	32,074	31,360	....	63,434
1828	30,232	47,284	....	77,516
1829	25,110	79,973	7,000	112,083
1830	41,750	89,984	43,000	174,734
1831	40,966	81,854	54,000	176,820
1832	70,000	209,271	84,000	363,271
1833	123,001	252,971	111,777	487,749
1834	106,244	226,692	43,700	376,636
1835	131,250	329,508	90,000	560,758
1836	148,211	432,045	103,861	684,117
1837	223,902	530,152	115,387	869,441
1838	213,615	446,875	78,207	738,697
1839	221,025	475,077	122,300	818,402
1840	225,313	490,596	148,470	864,379
1841	143,037	624,466	192,270	959,773
1842	272,540	583,273	252,599	1,108,412
1843	267,793	710,200	285,605	1,263,598
1844	377,002	887,937	365,911	1,630,850
1845	429,453	1,131,724	451,836	2,013,013
1846	517,116	1,308,500	518,389	2,344,005
1847	633,507	1,665,735	583,067	2,882,309
1848	670,321	1,733,721	685,196	3,089,238
1849	781,656	1,728,500	732,910	3,243,066
1850	690,456	1,840,620	827,823	3,358,899
1851	964,224	2,328,525	1,156,167	4,448,916
1852	1,072,136	2,636,835	1,284,500	4,993,471
1853	1,054,309	2,665,110	1,475,732	5,195,151
1854	1,207,186	3,191,670	1,603,478	6,002,334
1855	1,284,113	3,552,943	1,771,511	6,608,567
1856	1,351,970	3,602,999	1,972,581	6,927,550
1857	1,318,541	3,373,797	1,952,603	6,644,941
1858	1,380,030	3,273,245	2,186,094	6,839,369
1859	1,628,311	3,448,708	2,731,236	7,808,255
1860	1,821,674	3,749,632	2,941,817	8,513,123
1861	1,738,377	3,160,747	3,055,140	7,954,264
1862	1,351,054	3,372,583	3,145,770	7,869,407
1863	1,894,713	3,911,683	3,759,610	9,566,006
1864	2,054,669	4,161,970	3,960,836	10,177,475
1865	2,040,913	4,356,959	3,254,519	9,652,391
1866	2,179,364	5,787,902	4,736,616	12,703,882
1867	2,502,034	5,161,671	5,325,000	12,988,725
1868	2,507,582	5,335,731	5,990,813	13,834,126
1869	1,929,523	5,725,138	6,068,369	13,723,030
1870	3,172,916	4,851,855	7,825,128	15,849,899
1871	2,116,683	6,314,422	6,682,302	15,113,407
1872	3,743,278	6,469,942	3,812,905	19,026,125
1873	3,243,168	6,294,769	10,047,241	19,585,178
1874	4,047,656	5,642,160	9,290,910	18,980,726
1875*	2,724,483	6,377,458	10,509,394	19,611,334

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* Figures for 1875, were furnished by R. P. Rothwell, editor of the *Engineering and Mining Journal.*

THE CUMBERLAND COAL TRADE, FROM ITS COMMENCEMENT. (SHIPMENTS ONLY.)—TONS OF 2,240lbs.

Compiled from official sources.

YEAR.	Tons.	YEAR.	Tons.
1842	1,708	1860	788,909
1843	10,082	1861	269,674
1844	14,890	1862	317,634
1845	24,653	1863	748,345
1846	29,795	1864	657,996
1847	52,940	1865	903,495
1848	79,571	1866	1,079,331
1849	142,449	1867	1,193,822
1850	196,848	1868	1,330,443
1851	257,679	1869	1,822,669
1852	334,178	1870	1,717,075
1853	533,979	1871	2,345,153
1854	659,681	1872	2,355,471
1855	662,272	1873	2,674,101
1856	706,450	1874	2,410,895
1857	582,486	1875	2,342,773
1858	649,656		
1859	724,354	Total	28,681,457

Weight of coal, in tons of 2,240 *pounds, per acre, from one foot in thickness to forty feet thick — specific gravity,* 1.25.

FEET.	Tons.	1 inch.	2 inches.	3 inches.	4 inches.	5 inches.	6 inches.	7 inches.	8 inches.	9 inches.	10 inches.	11 inches.
1......	1,519.25	1,645.85	1,772.45	1,899.46	2,025.66	2,152.27	2,279.87	2,403.48	2,532.08	2,658.69	2,785.29	2,911.85
2......	3,038.50	3,165.10	3,291.70	3,418.31	3,544.91	3,671.52	3,798.12	3,924.73	4,051.33	4,177.94	4,304.54	4,431.14
3......	4,557.75	4,684.35	4,810.93	4,937.56	5,064.16	5,190.77	5,317.37	5,443.98	5,570.58	5,697.19	5,823.79	5,950.39
4......	6,077.00	6,203.60	6,330.20	6,456.81	6,583.41	6,710.02	6,836.62	6,963.23	7,089.83	7,216.44	7,343.04	7,469.64
5.....	7,596.25	7,722.85	7,849.45	7,976.06	8,102.66	8,229.27	8,355.87	8,482.48	8,609.08	8,735.69	8,862.29	8,988.89
6......	9,115.51	9,242.11	9,368.71	9,495.32	9,621.92	9,748.53	9,875.13	10,001.74	10,128.34	10,254.95	10,381.55	10,508.15
7......	10,634.76	10,761.26	10,887.96	11,014.57	11,141.17	11,267.78	11,394.38	11,520.99	11,647.59	11,774.20	11,900.80	12,027.40
8......	12,154.01	12,280.61	12,407.21	12,533.82	12,660.42	12,787.03	12,913.63	13,040.24	13,166.84	13,293.45	13,420.05	13,546.65
9......	13,673.27	13,799.87	13,926.47	14,053.08	14,179.68	14,306.29	14,432.89	14,559.50	14,686.10	14,812.71	14,939.81	15,065.91
10......	15,192.52	15,319.12	15,445.72	15,572.33	15,698.93	15,825.54	15,952.14	16,078.75	16,205.35	16,331.96	16,458.56	16,585.16
11......	16,711.77	16,838.37	16,964.97	17,091.58	17,218.18	17,344.79	17,471.39	17,598.00	17,724.60	17,851.21	17,977.81	18,104.41
12......	18,231.02	18,357.62	18,484.22	18,610.83	18,737.43	18,864.04	18,990.64	19,117.25	19,243.85	19,370.46	19,497.06	19,623.66
20......	30,385.04	30,638.24	30,891.44	31,144.66	31,397.86	31,651.08	31,904.28	32,157.50	32,410.70	32,663.92	32,919.12	33,170.32
25......	37,981.29	38,361.09	38,740.89	39,120.72	39,499.52	39,880,35	40,260.15	40,639.98	41,019.78	41,399.61	41,781.41	42,160.21
30......	45,577.56	45,958.56	46,337.16	46,716.99	47,094.79	47,476.62	49,856.42	48,236.25	48,616.05	48,995.88	49,375.68	49,754.49
35.....	53,173.81	53,681.41	54,186.61	54,693.05	55,197.45	56,705.99	56,212.29	56,718.73	57,225.13	57,731.57	58,237.97	58,743.37
40......	60,770.08	61,276.48	61,782.88	62,289.32	63,795.72	63,302.16	63,808.56	64,315.05	64,820.40	65,327.84	65,834.24	66,340.64

AVERAGE CONTENTS OF COAL CARS.

The Central railroad (of New Jersey) scales at Penobscot, Luzerne county, Pennsylvania, give the average weight of coal of each kind, and measurement of contents, as below:

Lump	32.2 cubic feet per ton of 2,240 pounds.
Broken	33 9 cubic feet per ton of 2,240 pounds.
Egg	34.5 cubic feet per ton of 2,240 pounds.
Stove	34.8 cubic feet per ton of 2,240 pounds.
Chestnut	35.7 cubic feet per ton of 2,240 pounds.
Pea	36.7 cubic feet per ton of 2,240 pounds.

MINING—ZINC ORE.

"LEHIGH ZINC COMPANY'S MINES."

At Friedensville, Lehigh county, Pa.

Lehigh Zinc Company, Bethlehem, Pa.

Quantity of tons and value in dollars of annual product: 12,771 tons; value, $191,565.

Whole number of persons employed: 269.

In the classification made below, the number of each class employed, with the daily wages paid each class, and the time worked during the year.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys	Time in operation during year....
Superintendent	1	......	$5 50	....	313 days.
Time clerk	1	......	2 00	....	"
Foremen	7	......	$1 95 to 3 50	....	"
Engineers	9	......	1 25 to 2 40	....	"
Firemen	10	......	1 00 to 1 75	....	"
Carpenters	3	......	1 70 to 2 00	....	"
Blacksmiths	3	......	1 30 to 1 60	....	"
Wheelwrights	2	......	1 25 to 1 50	....	"
Harness maker	1	......	1 25	....	"
Carters	9	12	1 20	60c to 80c	"
Miners	72	......	1 10 to 1 80	....	"
Ore dressers	22	39	0 85 to 1 15	35c to 75c	"
Laborers	78	......	0 85 to 1 00	....	"

J. M. LEIBERT, *Sec'y.*

MINING—IRON ORE.

Ruck & Bros., Rucksville, Lehigh county, Pa.

Mined, 720 tons; value, $2,160.

Number of persons employed, 7, at an average daily wages of $1 00 per day. Time in operation, 4 months.

SOLOMON KEHM IRON MINES.

Emaus Iron Company, Lehigh county.

Number of tons mined, 3,395; value, $10,185.

Whole number of persons employed, 16. Wages, 12 men at an average of $1 00 per day, and 4 boys at 75 cents. In operation 11 months.

Remarks.—The ore is hematite. The bed is about 40 feet deep. The worthless stuff on the top is about 15 feet, and the rest is of the best ore.

THOMAS IRON COMPANY.

Hokendauqua, Pa.

Quantity of tons and value in dollars of annual product: 57,115 gross tons; $4 50.

Whole number of persons employed, about 500.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in oporation during year
Bosses	21		$1 50 to 2 00		4 mos.
Engineers	21		1 00 to 1 25		
Laborers—men	400		90 to 1 00		
boys		63		$ 55 to 70	

The foregoing includes the following named mines: Romigs, Meitzlers, Marcus Long, Chas. Long, Wm. Trexler, John Baner, Thos. Wormkessil, Jonas Trexler, Wm. Walberts, Saucon Mines, Henry Stine, Jonas Moyer, Rittenhouse Gap, Ruch's, Schaadt's, T. F. Kline, Rinker's, R. D. Butz.

All the above in Lehigh and Berks counties. Also a few mines in York and Cumberland counties.

All these ores are brown hematite, except the Rittenhouse Gap mines, which are a lean magnetite.

E. WICKLEY, *Supt.*

MECHLING MINE—LEHIGH VALLEY IRON WORKS.

Schreiber & Co., Shimersville, Lehigh county, Pa.

Quantity of tons and value in dollars of annual product: about 4,000 tons; value, $18,000.

Whole number of persons employed: 18.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Engineer.............	1	1	$1 35	$0 75	310 dys.	This is a magnetic mine.
Miners..............	16	......	1 18	......	"	

B. S. LEVAN, *Sup't*

1st. LEVAN & CO.'S MINE, IRONTON. 2d. FENSTERMACHER'S MINE, TOPTON. } LEHIGH VALLEY IRON CO.

1st. Horace Balliet, Ironton; 2d. Trexler & Fenstermacher, Topton.

Quantity of tons and value in dollars of annual product: 1st. 6,500 tons; value, $16,250. 2d. 5,500 tons; value, $13,750.

Whole number of persons employed: in 1st. 28; in 2d. 15.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....	REMARKS.
Engineer.............	1	......	$1 35	......	310 dys.	Levan & Co.'s mine.
Laborers.............	24	3	0 80	$0 50	"	
2nd.						
Engineer.............	1	......	0 75	......	"	Fenstermacher's mine.
Laborers.............	14	......	0 65	......		

These mines are both hematite.

MOYERS.

James Moyer, Fogleville, Lehigh county, Pa.

Mined, 1,563 tons; value, $1,015 95.

Whole number of persons employed, 14.

Wages—12 men, from 90 cents to $1 00 per day; 2 boys at 50 cents to 65 cents per day.

Henry Stein, Foglesville.

Mined, 5,108 tons; value, $13,563 20.

Whole number of persons employed, 17.

Wages—12 men at $1 10 per day; 3 boys at 75 cents per day.

In operation about 22 days per month during the whole year.

REMARKS.—Have plenty of iron ore on my farm, but am compelled to stop operating same on account of the great depression in the iron market.

KEMMERER'S MINE.

Upper Milford township, Lehigh county.

Mined, 510 tons, at 37½ cents per ton, for Allentown iron company.

Charles Swartz, Peter Swartz and Daniel Lauer, Emaus, Lehigh county.

Mined, 2,000 tons; valued at about $5,500.

Whole number of persons employed, 11.

Wages—9 men at 90 cents per day; 2 boys at 50 cents per day.

In operation about 10 months during the year. Ore, hematite.

Thomas Guth, Wescoeville.

Did not work my mines for the past two years, until the last two weeks. Can give a full statement next year.

KRECHEL'S ORE BED.

East Texas P. O.

Allentown Iron Co., Allentown.

Mine worked three months. Production 900 tons, at a royalty of 60 cents per ton.

Whole number of persons employed, 21. Wages: 17 men at $1 25 per day, and 4 boys at 80 cents per day.

These mines are situated in Lower Macungie, three-fourths of a mile east of East Texas. The property on which the ore bed is found contains twenty-one acres, of which six acres are workable. Quality of ore: Hematite.

STEPHEN KRECHEL.

IRONTON R. R. CO.

Ironton, Lehigh county, Pa.

Mine No. 1. Value of production, $27,307 26. Number of persons employed, 59. Wages: 47 men at $1 00 per day and 12 boys at 60 cents per day. In operation during the year 244 days.

WM. ANDREWS, *Sup't.*

HEMATITE, (Iron Ore.)

Levi Lichtenwalner, Trexlertown, Lehigh county.

Quantity of tons and value in dollars of annual product: worked 4 months, raised and delivered 1,600 tons in said time.

MONTHS.		No. of men......	No. of boys......	Daily wages paid men	Daily wages paid men..........	Time in operation during year ...
1874.	January	11	3	$1 30	60	4 mos.
"	February	11	3	"	"	"
"	March	12	3	"	"	"
"	April	12	3	"	"	"

Ore, hematite, and the average value of it was about $4 00 per ton. It was delivered to Rupp's wharf on the Catasauqua and Fogelsville railroad, in this county.

The body of said ore is more than ordinary. It yields about 55 per cent. The full capacity of the mines would require at least 26 men, and 6 boys, and the yield in proportion, namely, 900 tons monthly, the whole year. Two stationary engines are employed, one of which was idle. The ore bed is located in Upper Macungie township, Lehigh county, within 1½ miles from the village of Fogelsville. The ore is received by the Crane iron company, in Catasauqua.

LEVI LICHTENWALLNER.

IRON INDUSTRIES OF LEHIGH COUNTY.

Under date of October 17th, 1876, John C. Karsten, Esq., of Alburtis, communicates to the Bureau the following facts:

The two furnace stacks, Nos. 7 and 8, of the Thomas Iron Company, at Alburtis, Lehigh county, are in blast. No. 8 was put in blast September 26, and is working well, making together some 480 or 500 tons of 2,240 pounds, per week. William M. Weaver, Sup't.

The Millerstown Furnace, Macungie, Lehigh county, is in blast. It averages about 175 tons per week. N. W. Weaver, Sup't.

The Emaus Furnace is also in blast.

The Thomas Iron Company, at Hokendauqua, will blow in all idle stacks on or about November 1st, 1876.

The following Hematite ore mines commenced operations in October, 1876:

Bethlehem Iron Company, at Alburtis, Lehigh county, at Laner's mines, employ two large engines and 40 men. Stiles Levan, Sup't.

Ludwig, Hertzof & Lease, Blank's Farm, employ one engine and 26 men. Mine 400 tons per month. D. Ludwig, Sup't.

Gaumer & Schmayer, at Alburtis, have 10 men. Mine 350 tons per month. Wilson Gaumer, Sup't.

Coleraine Iron Co., near Macungie, have some twenty men and seven carts employed. Mine 500 tons per month. Lewis Klotz, Sup't.

Thomas Iron Co., on the South mountain, mine 450 tons per month. George Griesse, Sup't.

T. I. Co., on the road to Hensingersville, near Alburtis, mine 800 tons per month. James W. Findley, Sup't.

Schmoyer's Mine, near Macungie, Lewis Schmoyer, Sup't, mines 500 tons per month, and employes 1 engine, 12-horse power; 7 carts and 19 men.

Under date of December 15th, 1876, Mr. Karsten communicates the following:

The Lehigh Iron Company, at East Penn Junction, Allentown, have blown in their two stacks on November 1st and 12th, and are working well Their weekly capacity is between 300 and 350 tons. They are receiving iron ore from Alburtis (Hematite), and are also using Jersey ore (magnetic).

The two stacks of the East Penn Iron Company, Lyons, Berks county, are now idle, having been out of blast since November 11th, 1876.

The Kutztown Furnace Company, at Kutztown, Berks county, is to be arranged and prepared for work, to go in blast in or about the first of January, 1877, under the control of the Hematite Iron Company, of Allentown.

E. and G. Brookes, Birdsboro', Berks county, have also made preparations to blow in another stack on or before January, 1877, making two stacks in full blast.

The Bethlehem Iron Company, of Bethlehem, have also made arrangements to have all their ore mines in operation by January, 1877, all those at Alburtis to begin at once.

Mr. Karsten remarks that the iron business has improved somewhat during the last two months in comparison with 1874–5. Mines have been re-opened, and there seems to be a reaction in the demand for ore, at least along the line of railroads. One great drawback is owing to the land owners, most of whom have made their leases with companies during good times, or before 1872–3, and among their stipulations is a high royalty ranging from 55 to 80 cents per ton. Most of these leases compel the lessee to take out yearly from 500 to 1,000 tons, or the payment of the stipulated royalty or forfeiture of lease or contract. This very high royalty acts as a drawback in mining good places, and compels furnace masters to get ores where there is a low royalty or purchase cheaper ores. But upon the whole the iron trade has improved, and few furnaces in Lehigh county have extensive stock on hand, and, if any, they are holding back for a better market, although those who wish to sell can now find a ready market.

STEEL IRON ORE MINES.

In Hereford township, at Seisholtzville, there is now in operation and has been since 1872, one of the largest steel iron ore mines in Pennsylvania, operated by Jacob Gilberg, who is now working 60 men, two engines of 18 horse power, and supplying the furnaces of the Pottstown Iron company, E. & G. Brooks, Birdsboro', Bethlehem Iron company, Keystone Furnace company, and J. & J. Wister, Harrisburg. This iron ore is said to equal or exceed the Jersey or Cornwall magnetic ore, and has less sulphur and phosphorus, being also used with hematite. About 500 tons are sold per month.

Characteristics.—There are three shafts used, through which the ore is brought to the surface. One on the western side of the mine 112 feet deep, with two gangways, one at 60 feet and one at 95 feet. No. 2, is only 60 feet deep and still shows evidence of having a heavy deposit within its reach. No. 3, 102 feet deep, was finished September 25, 1876, since which time an iron ore has been produced that yields 70 per cent. clean iron ; it is a very heavy and hard ore.

An accident occurred at this shaft, which, for a time hindered the mining of the *hard* ore, but at present, regular mining operations are carried on and shipments made.

A new lease has been obtained by Mr. Gilberg, for the property adjoining, which in course of time will give him room enough to develop in a first class manner. All machinery and appliances are of the latest and most approved styles, and every precaution is taken to insure the safety of the miner.

IRON ORES OF LEHIGH COUNTY.

[From reports of progress in the Laboratory of the Second Geological Survey of Pennsylvania, by Andrew S. M'Creath.]

	I.	II.
Sesquioxide of iron	69.714	68.590
Sesquioxide of manganese	1.292	traces
Alumina	2.388	2.010
Lime	.300	.270
Magnesia	.317	1.480
Sulphuric acid	.035	.060
Phosphoric acid	.448	.340
Water, combined	11.340	10.750
Water, hygroscopic	....	6.950
Silicious matter	13.915	9.930
	99.749	100.380
Metallic iron	48.800	48.013
Metallic manganese	.900	traces.
Sulphur	.014	.025
Phosphorus	.196	.149

I. Conrad Seam's mine, 1½ miles east of Emaus.

II. Ludwig's new mine, 1 mile from Alburtis.

	III.
Binoxide of manganese	77.960
Protoxide of manganese	4.320
Sesquioxide of iron	3.660
Alumina	.711
Oxide of cobalt	.390
Oxide of nickel	trace.
Oxide of copper	trace.
Baryta	.152
Lime	.770
Magnesia	.236
Soda	.368
Potash	3.042
Sulphuric acid	trace.
Phosphoric acid	.149
Water	3.980
Silicic acid	4.845
	100.583
Metallic iron	2.562
Metallic manganese	52.631
Phosphorus	.063

III. Ironton railroad company's mine No. 1, at Ironton. Manganese ore.

IRON ORES OF LEHIGH COUNTY—CONTINUED.

NAME AND LOCALITY OF ORE.	Iron.........	Manganese..	Sulphur.....	Phosphorus.	Silicious matter.........
IV. Jonas Kreischmann's mine, 1 mile east of Alburtis	46.600	.454	.027	.597	16.230
V. J. Barber & Co.'s mine, Hensingerville	47.000	.518	.030	.111	16.050
VI. Thomas Iron Company's mine, at Hensingerville	44.600	.576	trace.	.151	20.340
VII. Ludwig's old mine, 1 mile W. N. W. of Alburtis	51.250	.381	.016	.100	11.010
VIII. Reuben Romig's mine, ¾ mile east of New Texas	51.950	.360	trace.	.106	11.430
IX. Werner & Reinhart's mine, ½ mile east of New Texas	48.500	.194	trace.	.123	16.560
X. Lichtenwalner's mine, ¾ mile east of Alburtis	48.250	.432	.045	.025	18.450
XI. Guth's mine, ¾ mile west north-west of Wescoeville	48.200	.418	.005	.158	14.810
XII. Breinig's mine, 1½ miles N. N. W. of Breinigsville	48.100	.360	.045	.164	13.440
XIII. Moser's mine, ⅓ mile north of Breinigsville	57.500	.749	trace.	.165	3.470
XIV. Thomas Breinig's mine, ⅓ mile north of Breinigsville	58.500	.223	.084	.043	2.800
XV. Fogel's mine, ½ mile north-west of Trexlertown	48.500	.360	.002	.328	15.580
XVI. Bortz's mine, ½ mile east of Trexlertown	49.300	.216	trace.	.235	15.120
XVII. Miller's mine, ¾ mile S. S. W. of Fogelsville	51.400	.295	.021	.233	11.290
XVIII. Stein's mine, 1 mile W. S. W. of Fogelsville	49.600	.583	.007	1.288	9.440
XIX. Laro's mine, 1½ miles south-west of Fogelsville	43.700	.763	.005	.869	18.580
XX. Kaiser's mine, 1 mile west of Alburtis	37.000	3.033	.035	.186	28.990
XXI. Keck's mine, ½ mile east of Emaus	47.200	2.709	.039	.075	14.980
XXII. Schwartz's mine, ½ mile south of Emaus	34.000	.115	.020	.676	37.695
XXIII. Roth's mine, 3 miles north of Emaus	53.000	.216	.024	.096	7.290
XXIV. Jobst's mine, 2½ miles west of Emaus	46.300	.475	.018	.160	15.290
XXV. Ritter's mine, at Ironton	47.700	2.968	.049	.328	12.595
XXVI. Brown's mine, at Ironton	50.000	.208	.080	.086	12.520
XXVII. Sheiver's mine, 1½ miles west of Catasauqua	46.000	.050	.073	.210	17.870
XXVIII. Guth's mine, 4 miles west of Catasauqua	41.000	.036	.098	.240	26.735
XXIX. Boyer's mine, 4½ miles west of Catasauqua	51.300	.064	.106	.192	9.145
XXX. Levan's mine, 4½ miles west of Catasauqua	40.000	.115	.140	.099	26.860

IRON ORES OF YORK COUNTY.

BROWN HEMATITE IRON ORES.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.
Sesquioxide of iron	64.428	61.428	72.143	63.285	69.714	67.000	74.285	62.428	65.000	64.714
Sesquioxide of manganese	2.150	5.570	.387	2.210	1.135	2.341	3.900	.992	1.712	.155
Alumina	3.148	3.176	1.725	.765	1.422	.950	1.632	2.024	2.355	1.607
Lime	.140	.157	.168	.196	.106	1.680	.340	.020	.390	.250
Magnesia	.270	.155	.330	.216	.194	.591	.190	.237	.356	.317
Sulphuric acid	.230	.236	.123	.068	.095	.277	.211	.100	.105	.067
Phosphoric acid	1.374	1.546	.432	2.968	.844	2.804	.948	.698	3.295	1.559
Water	11.020	11.010	5.760	10.880	11.100	11.890	12.140	11.826	11.790	12.045
Silicious matter	16.950	16.600	19.090	19.750	15.630	12.320	5.740	21.795	14.880	19.410
	99.710	99.878	100.158	100.356	100.240	99.853	99.386	100.120	99.883	100.124
Metallic iron	45.100	43.000	50.500	44.300	48.800	46.900	52.000	43.700	45.500	45.300
Metallic manganese	1.490	4.004	.269	1.538	.790	1.630	2.716	.690	1.192	.108
Sulphur	.090	.094	.049	.024	.038	.110	.084	.040	.042	.027
Phoshorus	.610	.675	.189	1.303	.343	1.224	.414	.305	1.439	.681

I. Bollinger Bank, 4 miles north-east of Hanover.
II. Haldeman Bank, 5 miles nort-east of Hanover.
III. Haldeman Bank, "red oxide."
IV. Fritz Bank, 3¾ miles north-east of York.
V. Margaretta Bank, 5½ miles south-east of Wrightsville.
VI. Early & Killinger's Bank, 2½ miles east of Littlestown.
VII. Mickley's Bank, 1 mile north-east of Smith's Station, H. J. R. R.
VIII. " " " " "
IX. Bauman's Bank, ½ mile east of York Road Station.
X. Rudesil's Bank, ¾ mile north from Smith's Station.

IRON ORES OF YORK COUNTY—*Continued.*

SPECULAR IRON ORES.	XI.	XII.	XIII.	XIV.	XV.
Protoxide of iron	....	2.121	3.021	.321	11.700
Sesquioxide of iron	82.607	88.357	91.214	72.357	78.000
Oxide of copper	.222	None.	None.	....	....
Sesquioxide of manganese	.041	.016	Trace.	.031	.667
Alumina	4.843	3.425	1.819	.999	5.420
Lime	.760	1.290	.270	.240	.280
Magnesia	.918	.479	.187	.133	.169
Carbonic acid	.123	None.	None.	....	....
Sulphuric acid	.150	.010	.132	.017	.077
Phosphoric acid	Traces.	.291	.160	.007	.100
Water	1.277	.551	1.770	.224	.250
Silicious matter	9.530	3.373	1.910	25.660	3.120
	100.471	99.913	100.583	99.989	99.783
Metallic iron	57.825	63.500	66.200	50.900	63.700
Metallic manganese	.029	.011	Trace.	.022	.367
Sulphur	.060	.004	.053	.007	.031
Phosphorus	Trace.	.127	.070	.003	.044

XI. Mine Bank, 2½ miles south-west from Wellsville.
XII. Mine Bank, (Altlandt's lease,) 2½ miles south-west from Wellsville.
XIII. M'Ilwee's Bank, (Altlandt's lease,) 4 miles south east from Dillsburg.
XIV. Geo. Cole's Bank, 1½ miles from Newman's on Cole's Valley road.
XV. Jos. Bentz's Bank, 2 miles south-west of Wellsville.

MAGNETIC IRON ORES.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.
Protoxide of iron	18.643	18.385	20.130	13.821	15.429	15.364	20.442
Sesquioxide of iron	42.100	43.414	44.732	47.859	48.565	72.214	68.142
Bisulphide of iron	4.093	.450	.742	1.605	.009	....	....
Sulphide of copper	.098	Trace.	....	Trace.	....	....	....
Sulphide of cobalt	.766	.326	....	.040	....	....	....
Alumina	2.417	2.774	1.050	3.775	3.486	4.752	3.515
Protoxide of manganese	.186	.352	Trace.	.036	.617	.296	.278
Lime	6.132	7.563	1.484	5.604	4.746	.460	1.570
Magnesia	6.738	5.001	1.837	4.129	6.866	1.448	.277
Potash and soda	.350	.054	....	....	1.143	....	....
Carbonic acid	1.760	1.640	None.	None.	1.375	....	....
Sulphuric acid	.119	.011	....	1.105	....	.047	.225
Phosphoric acid	.052	.052	.038	.107	.160	.113	.448
Water	1.080	2.320	1.580	1.140	1.888	1.485	....
Silica	15.120	17.860	27.700	20.330	15.466	3.840	5.310
	99.654	100.202	99.293	99.551	99.750	100.019	100.207
Metallic iron	45.880	44.900	47.314	45.000	46.000	62.500	63.600
Sulphur	2.680	.244	.361	1.298	.005	.019	.090
Phosphorus	.023	.023	.018	.047	.070	.050	.096

XVI. Logan's Shaft, 1 mile north-east of Dillsburg.
XVII. Fuller's Mine, 3 miles north-east of Dillsburg.
XVIII. Underwood's Mine, at Dillsburg.
XIX. M'Clure's Mine, 2 miles east of Dillsburg.
XX. Minter Bank, 1½ miles north north-west of M'Knightstown.
XXI. Price & Hancock's Mine, 1½ miles east from Dillsburg.
XXII. S. March's Bank, 1½ miles south-east of Wellsville.

BROWN HEMATITE ORES OF BLAIR COUNTY.

	1.	2.	3.	4.	5.	6.	7.
Bisulphide of iron	....	....	.004	.024	....	....	....
Sesquioxide of iron	52.428	73.714	84.428	78.143	78.428	78.428	75.571
Sesquioxide of manganese	1.344	.610	.368	.103	.356	.102	.081
Oxide of cobalt	....	....	trace.	trace.	....	trace.	....
Alumina	2.042	1.979	2.617	2.146	1.886	2.204	3.426
Lime	trace.	trace.	.070	.030	.030	.050	.680
Magnesia	.129	.309	.227	.493	.097	.511	.673
Sulphuric acid	.075	.072	.237	.147	.060	.025	trace.
Phosphoric acid	.080	.137	.123	.137	.396	.174	.513
Water	9.375	10.510	8.672	11.886	11.248	11.958	12.595
Insoluble residue	34.700	12.260	3.460	6.845	7.410	5.700	7.010
	100.173	99.591	100.206	99.954	99.911	99.152	100.539
Metallic iron	36.700	51.600	59.100	54.710	54.900	54.900	52.900
Metallic manganese	.936	.425	.256	.072	.248	.072	.057
Sulphur	.030	.029	.096	.072	.024	.010	trace.
Phosphorus	.035	.060	.054	.060	.173	.076	.224

1. Springfield mines, bank No. 1, Daw's bank ; wash ore.

2. Springfield mines, bank No. 2; wash ore.

3. Springfield mines, bank No. 2; bombshell ore.

4. Springfield mines, bank No. 3; wash ore.

5. Short Mountain mines, Catharine township, one and a half miles north-west of Franklin forge.

6. Iron ore near Ætna furnace, Canoe Valley, Tyrone township.

7. Iron ore on Shinefelt's place, two miles south-east of Williamsburg, Woodberry township.

MANUFACTURES—IRON FOUNDRIES AND MACHINE SHOPS.

ALLEGHENY COUNTY.

TOTTEN & CO., PITTSBURGH, PA.

Rolling mill machinery.

Value in dollars of annual product: $128,000.

Whole number of persons employed: 50.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of apprentices..........	No. of youth ...	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year...
Iron moulders	13	5	......	$2 16⅔	$0 70	......	200
Machinests (best)	3	2	......	2 25	1 00	......	250
Do.....(ordinary)	5	......	......	2 00	......	......	250
Foremen	3	......	....	4 00	......	......	250
Pattern-makers and carpenters	2	1	......	2 25	0 75	......	275
Laborers, carters	16	......	......	1 75	......	......	200

For year ending December 31, 1875.

TOTTEN & CO.

BISSELL & CO., PITTSBURGH, PA.

Manufacturers stoves, ranges and grates.

Value in dollars of annual product: $100,000.

Whole number of persons employed: about 45.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year....
Iron moulders	20	5	....	$2 25	$1 25	......	9 mos.
Foreman	1	......	....	......	......	......	
Engineer	1	......	....	......	......	......	
Pattern-maker and carpenter	1	......	....	......	......	......	
Apprentices	5	......	....	......	......	......	
Fitters	5	......	...	......	......	......	
Enamellers	2	......	....	......	......	......	
Other hands	8	......	....	......	......	......	

BISSELL & CO.

MACKINTOSH, HEMPHILL & CO., PITTSBURGH.

Engines and castings.

Value in dollars of annual product: $115,788 06.

Whole number of persons employed: 60.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year....
Iron moulders	13	......	....	$2 50	......	......	About full time. No exact record.
Machinists, (best)	9	......	....	2 50	......	......	
Do.... (ordinary)	9	......	....	2 25	......	......	
Blacksmiths	2	......	....	2 75	......	......	
Blacksmiths' helpers	2	......	....	1 75	......	......	
Foremen	2	......	....	4 00	......	......	
Engineer	1	......	....	2 00	......	......	
Pattern-makers and carpenters	3	......	....	2 50	......	......	
Laborers	14	......	....	1 75	......	......	
Apprentices	......	4	....	......	$1 50	......	
Draughtsman	1	......	....	2 50	......	......	

Have no exact record for this. Probable average 300 days per year.

MACKINTOSH, HEMPHILL & CO.

A. HARTUPEE, PITTSBURGH, PA.

Founder and engine builder.

Value in dollars of annual product: $200,000.

Whole number of persons employed: average about 100.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth..........	Time in operation during year....
Iron moulders	10	1	2	$2 50	$1 00	$1 50	300 days.
Machinists (best)....................	16	......	....	2 50	......	......	
Do.....(ordinary)...............	18	......	8	2 00	......	1 50	
Do.....(inferior)	2	......	....	1 66	......	......	
Do.....(helpers).................	4	......	....	1 50	......	......	
Blacksmiths..........................	2	......	....	2 75	......	......	
Blacksmiths' helpers.................	2	......	....	1 50	......	......	
Foremen..............................	3	......	....	5 00	......	......	
Engineer	1	......	....	2 00	......	......	
Pattern-makers and carpenters	4	......	....	2 50	......	......	
Assistants...........................	1	......	....	2 00	......	......	
Laborers, carters....................	16	......	...	1 25	......	......	
Apprentices	5	5	....	......	1 00	......	

A. HARTUPEE.

ARMSTRONG & HUTCHINSON.

Corner of Park Way and Sandusky street, Allegheny City, Allegheny county, Pa. Stop gates, fire plugs and machinery.

Quantity in measure and value in dollars of annual product: Stop gates from three inches to forty; fire plugs of all sizes—$31,000.

Whole number of persons employed: 16.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of apprentices..........	No. of youth	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth..........	Time in operation during year....
Machinists, (best).................	8	......	....	$3 00	......	......	Full time.
Blacksmith..........................	1	......	....	3 00	......	......	"
Engineer............................	1	......	....	2 00	......	......	"
Pattern-maker and carpenter	1	......	....	3 00	......	......	"
Apprentices.........................	......	5	....	......	$1 00	......	"

Characteristics of Establishment.—Building 68 feet front on Park Way, and 80 feet deep on Sandusky street, built in the shape of an L; front part 32 feet deep and back part 30 feet, with blacksmith shop in area of L. The front part brick and back iron clad, both two stories high, with one boiler and steam engine of 10-horse power, and contains seven turning lathes of iron and one of wood; five steam drills, one planer of iron and one line of shafting through the place, with the proper number of vises and benches for said building.

ARMSTRONG & HUTCHINSON.

GRAFF, HUGUS & CO., PITTSBURGH, PA.

Stove, ranges, hot air furnaces and grates.

Value in dollars of annual product: $100,000.

Whole number of persons employed: 57.

The number of each class employed, with the name or title by which they are known to the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of apprentices..........	No. of youth...	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	25	10	10	$2 00	$1 35	$1 00	
Blacksmith	1	......	...	......	......	......	
Foreman	1	......	...	......	......	......	
Engineer	1	......	...	......	......	......	
Pattern-maker and carpenter	1	......	...	......	......	......	
Laborers, carters	2	......	...	......	......	......	
Fitter	1	......	...	......	......	......	

GRAFF, HUGUS & CO.

ROBT. LEA, PITTSBURGH, PA.

Machinery.

Quantity in measure and value in dollars of annual product: 153 tons, of metal; value, $10,630 39.

Whole number of persons employed: 7 men and 3 apprentices.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices....	No. of youth....	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid youth	Time in operation during year....
Iron moulders	1	1	....	$3 00	$0 83	......	1 year.
Machinists (best)	3	......	....	2 75	......	......	
Do....(ordinary)	1	......	....	2 25	......	......	
Do....(inferior)	......	2	....	......	1 00	......	
Do....(helpers)	1	......	....	2 00	......	......	
Engineer	1	......	....	2 00	......	......	

Remarks.—We have but few of our best men at work and they have not worked full time for the last two years, so we took the average time. Our business is principally river work, and there has been very little of that done the last two years.

Pittsburgh, *June 6th*, 1876.

ROBT. LEA.

ANDERSON, MAXWELL & PORTER.

Castings, engines and boilers, 33 and 40 Park Way, Allegheny City, Pa.

Quantity in measure and value in dollars of annual product: Sales for the year ending December 31, 1875, $60,245 83.

Whole number of persons employed: average 35.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year.

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	3			$2 25	$1 00		Nine hours per day steady work during the year.
Machinists, (best)	3			2 40			
Do......(ordinary)	4			2 25			
Do......(inferior)	4	4		1 00			
Do......(helper)	1			1 50			
Boiler makers	6			2 25			
Do......(helpers)	3			1 25			
Blacksmith	1						
Do......(helper)	1						
Foreman	1			4 00			
Engineer	1			1 50			
Pattern-maker and carpenter	1			2 50			
Laborers	2			1 50			
Carter	1			2 00			
Apprentices	3	3		1 00			
Book-keeper	1			4 15			

Remarks.—We have been doing business for nine years, and find a falling off of 25 per cent. on sales over former years. The present year so far, looks more favorable, and we feel the prospects are much better in our line than any time since the panic. We are now employing 60 men full time, 10 hours per day.

Our manufacture consists of general machine castings, making house fronts a specialty, engines from 2 to 60-horse power, suitable for flour, rolling and saw mills, coal mines and oil wells, boilers of all descriptios, both marine and land purposes. While our sales amount to $60,245, it cost us $20,552 in labor to produce this, and $34,311 purchases of raw material, leaving only $5,382 to pay taxes and general expense; the above amounts are taken from our books, and is a correct statement.

Yours respectfully,

ANDERSON, MAXWELL & PORTER.

SWICK & DIXON, PITTSBURGH, PA.

General jobbing, and repairing of agricultural machinery.

Value in dollars of annual product: $2,500.

Whole number of persons employed: Helpers, 2; not steady, but just as we need them.

Remarks.—Our establishment is small, and being practical men ourselves, we have not been employing any men except blacksmith helpers.

to which we have been paying $1 75 per day. Our principal work is the manufacture of wrought iron furnace tuyeres and general jobbing and repairing agricultural machinery. We have only been doing a business of about $2,500 per year. We do not know as we have any valuable information to furnish you at present.

Respectfully yours,

SWICK & DIXON.

ARMSTRONG COUNTY.

ANDERSON & MARSHALL, KITTANNING P. O.

Stoves, car wheels and general jobbing.

Value in dollars of annual product: $7,000.

Whole number of persons employed: 6 men.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of apprentices.........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year...
Iron moulders	3	......	....	$2 25	......	......	11 months.
Foreman	1	......	....	4 00	......	......	Full time.
Laborer, carter	1	......	....	1 25	......	......	"
Fitter	1	......	....	2 00	......	......	11 months.
Cupola man	1	......	....	1 66½	......	......	"

Remarks.—Our establishment is large enough to do five times as much as we do. We do no machine work of any account; have store and tin shop in connection; employ about three tinners. We find business the last three years in comparison with former years a great change. We have the oldest foundry in town; was once burnt down. Our business is small, and find that competition with large establishments is one of the main features; they have all the facilities and modern improvements which we have not; think that we pay about city prices for labor; have to have our coke shipped from the city, which makes it cost about 10 cents per bushel. Would say that our men are sober, industrious, good men, good citizens and intelligent, and seem to be satisfied with their lot. I have tried to confine myself to the question; appreciate the object, and am desirous of giving all the information that I can. We have an excellent country here for manufacturing, ore, lime, coal, fire clay in abundance.

Yours, &c.,

ANDERSON & MARSHALL.

BRADY'S BEND IRON CO.

Brady's Bend, Armstrong county, Pa.

Remarks.—This company when in operation manufactures railroad iron exclusively, producing on their property all the raw materials required in the manufacture. The works have been completely shut down since October, 1873. When in operation the number of employees of all classes varied from 1,000 to 1,200, sustaining a population of over 4,000, and indirectly benefiting a much larger number. The mines of ore and coal are capable of standing all the demand that has been made upon them in the past, when in full operation, for another hundred years, according to the computation of experts in mining and engineering, while the supply of limestone, whetstone and fire clay is practically inexhaustible.

Rails made in this establishment from our own iron with a small proportion of old rails, have withstood the wear on the main track of one of our prominent railroads for a period of over ten years, a length of time that will compare very favorably with the life of the best steel rails. The facilities for manufacture and shipment of the finished product are unsurpassed, and it is safe to say that at no point in this State or county would capital judiciously applied, find a safer investment or more profitable return than here.

F. W. RHOADES,
Agent in charge for Bondholders.

BEAVER COUNTY.

A. F. WOLF & CO., BEAVER FALLS.

Stoves and hollow-ware.

Value in dollars of annual product: $50,000.

Whole number of persons employed: 30

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices..........	No. of youth ...	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid youth	Time in operation during year....
Iron moulders	17	5	....	$2 75	$0 75	......	11 months.
Blacksmith	1	....	....	2 00	....	......	
Foreman	1	....	....	3 50	....	......	
Pattern-makers and carpenters	2	....	....	2 00	....	......	

A. T. WOLF & CO.

BEAVER FALLS CO-OPERATIVE FOUNDRY ASSOCIATION.

Manufacturers of cooking, heating and parlor stoves, hollow-ware, &c., Beaver Falls.

Value in dollars of annual product: $40,000.

Whole number of persons employed: 30.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices,	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year....
Iron moulders.	12	....	....	$3 00 to $4 00	....	75c	Ten months.
Machinist, (best)	1	....	....	2 50	....	....	
Foreman and superintendent	2	....	....	3 60	....	....	
Engineer.	1	....	....	1 50	....	....	
Pattern-maker and carpenter	1	....	....	2 00	....	....	
Laborer, carter	1	....	....	1 66	....	....	
Apprentices	....	4	....	....	$1 to 1 50	....	
Fitters.	3	....	....	2 00	....	....	
All others, agent, &c	5	....	....	2 50 to 3 00	....	....	

CO-OPERATIVE FOUNDRY ASSOCIATION,

Per Jas. Todd, *Book-keeper*.

MERRICK & CO., NEW BRIGHTON, BEAVER CO., PA.

Grate fronts, grates, fenders and summer pieces.

Value in dollars of annual product: $9,156 35.

Whole number of persons employed: January, 12; February, 11; March, 11; April, 11; May, 11; June, 11; July, 0; August, 0; September, 0; October, 7; November, 7; December, 7.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youths........
Iron moulders	3	3	....	$2 75	$1 00	......
Pattern-maker and carpenter	1	......	....	2 00	....	......
Fitter.	1	......	....	2 00	....	......
Cleaner and cupola.	1	......	....	1 50	....	......
Japanners.	2	......	....	2 00 1 50	....	......

Time in operation during the year: January, 22 days; February, 22 days; March, 21; April, 23; May, 15; June, 19; July, 0; August, 0; September, 0; October, 24; November, 12; December, 20—Total, 178 days.

Characteristics of Establishments.—Stone foundry, truss roof, 50x60 feet; cupola, 26 inches in the clear; sheet iron, with fire brick lining, two blast holes; can melt 3,000 pounds per hour. Fitting and storage building, 35 x100 feet, two stories; upper story used for pattern and carpenter shop, storage of patterns, &c.; lower story for fitting room, office and storage of goods; lower story of main building store; upper story wood, with tin roof. Additions to main building, coke house, 1,000 bushels, 15x15 feet; rubbing room, 8x15 feet; enameling kiln for glass enamel, 6x6 feet; Japanning oven, for Black Japan, 10x10; Japanning room for Black Japan, 8x10. Sheet iron room for making summer pieces, stove pipe, &c., with 300 ton hydraulic press, 8x20.

We make as a specialty Merrick's patent anti-dust grate and pressed sheet iron summer pieces, besides the different classes of common and fine finished grate fronts and fenders.

The year 1875, and so much of 1876 as has passed, were exceedingly dull in our line of trade. The time made and the amount of sales being not more than half as much as usual.

Yours truly,

E. D. MERRICK,
Of MERRICK & Co.

Are at present, June 15, shut down with large stock of goods and material on hand.

E. D. MERRICK & F. A. MERRICK.

FALLSTON FOUNDRY AND MACHINE SHOP, NEW BRIGHTON, PA.

Stoves, plows and engines.

Value in dollars of annual product: $3,500.

Whole number of persons employed: 4.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices.........	No. of youth....	Daily wages paid men...........	Daily wages paid apprentices....	Daily wages paid youth..........	Time in operation during year....
Iron moulder	1			$2 50			275 days.
Machinist (best)	1			2 50			75 days.
Apprentices		2			$1 00		

JOHN THORMLEY.

BEDFORD COUNTY.

SHIRES & JORDAN, BEDFORD, BEDFORD CO., PA.

Value in dollars of annual product: $9,577 00.

Whole number of persons employed: 4.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid to each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	1	......	....	$1 93¾	......	......	8 months.
Machinists, (best,) in wood..........	1	......	....	1 75	......	......	"
Blacksmiths..........................	1	......	....	1 50	......	......	"
Apprentices..........................	......	1	....	......	$1 00	......	"

Remarks.—We have an iron foundry, machine shop, wood shop and blacksmith shop. Our principal work is building threshing machines, from one to four horse; plows, and other farm implements; mill castings, &c. The firm, P. H. Shires & J. R. Jordan, work all the time and make full hands, which are not put down in the above schedule. Mr. Shires is the machinest, does the turning and fitting. Mr. Jordan makes the patterns, flasks, &c., and does the carpenter work.

Before the panic we done more than double this amount of business.

SHIRES & JORDAN.

FREDERICK FELTON.

Everett P. O., Bedford county, Pa.

Machine castings.

Value in dollars of annual product: $3,080.

Whole number of persons employed: 1.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

Iron moulders, 2; daily wages paid, $1 50; time in operation during year, 10 months.

Remarks.—My establishment is but a common foundry for making plow castings, mill castings, etc. The patterns I make myself, and do the turning myself also.

FREDERICK FELTON.

BERKS COUNTY.

J. H. STERNBERGH'S BOLT AND NUT WORKS, READING, Pa.

Bolts, nuts, washers, rivets, screws, &c.

Quantity in measure and value in dollars of annual product: Product of this department year 1875, about $125,000 worth.

Whole number of persons employed: 58 in this department.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. apprentices,	No. of youth....	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year....
Machinists, (best)	5	....	....	$1 75 to $2 00	......	......	......
Do......(ordinary)	3	....	....	1 50 to 1 75	......	......	......
Do......(apprentices)	....	2	....	50 to 90	......	......	......
Clerk	1	....	....	5 00	......	......	......
Assistant clerk	1	....	....	1 00	......	......	......
Blacksmith	1	....	....	1 80	......	......	......
Do......(helper)	....	1	....	80	......	......	......
Foremen	3	....	....	4 00, 3 00, 2 00	......	......	......
Engineer	1	....	....	1 75	......	......	......
Pattern-makers and carpenters	3	....	....	2 25, 1 75	......	......	......
Laborers, carters	6	....	....	1 25	......	......	......
Box maker	1	....	....	1 25	......	......	......
Packers	2	....	....	1 50, 1 25	......	......	......
* Bolt, nut and rivet makers	15	....	....	....	......	......	......
* Boys in bolt and nut department	....	....	13	....	......	......	......

* On piece work.

J. H. STERNBERGH.

CAMBRIA COUNTY.

JOHNSTOWN MECHANICAL WORKS.

Johnstown, Cambria county, Pa.

Steam engines, saw mills, house builders, &c.

Value in dollars of annual product: $3,132 37.

Whole number of persons employed: 25.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices..........	No. of youth...	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid men	Time in operation during year...
Iron moulders	4			$1 66			
Machinists (best)	3	1		2 73	$0 50		
Do.....(ordinary)	1			1 70			
Blacksmiths	2			1 70			
Blacksmiths' helper	1			1 10			
Engineer	1			1 30			
Pattern-makers and carpenters	7			1 79			
Assistants	2			1 50			
Laborers, carters	3			1 18			

W. B. BONACKER, *Sup't.*

MILLER & HUBNER.

Manufacture stoves and light jobbing.

Value in dollars of annual product: $2,500.

Whole number of persons employed, 3.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

Iron moulders—men, 2; apprentices, 1; daily wages paid men, $2 25; apprentices, 60 cents; time in operation during year, 9 months.

MILLER & HUBNER.

CARBON COUNTY.

ALBRIGHT & STROH, MAUCH CHUNK, CARBON CO., PA.

Value in dollars of annual product: $58,837 54.

Whole number of persons employed, 42.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices........	No. of youth....	Daily wages paid men.........	Daily wages paid apprentices...	Daily wages paid youth........	Time in tion during year....
Iron moulder	5	1	....	$2 00 to $2 25	$1 00	......	Average 300 days.
Machinists, (ordinary)	7	4	....	2 00	1 00	......	
Machinists, (inferior)	5	......	....	1 35 to 1 68	......	......	
Machinist, (helper)	1	......	1	1 25	......	$ 30	
Blacksmith	1	......	....	1 40	......	......	
Blacksmith, helper	1	......	....	1 25	......	......	
Foremen	3	......	....	2 50, 2 75, 3 00	......	......	
Pattern-makers and carpenters	2	1	....	1 75, 1 80	1 50	......	
Laborers	6	......	....	1 25	......	......	
Watchman	1	......	....	1 25	......	......	
Teamsters	1	......	....	1 75	......	......	
Cupola tender	1	......	....	1 65	......	......	
Core maker	1	......	....	1 62	......	......	

Remarks.—The work manufactured by this establishment consists of steam pumps, coal jigs for the separation of slate from coal, patent grate bars, steam engines, coal breakers, mine and quarry machinery, car and bridge castings, iron fronts for buildings and architectural iron work, patent fire plugs and four way stops, and jobbing work in general.

The work shops consist of foundry, machine shop, blacksmith shop and pattern shop. Water power. Pay day, every Friday.

ALBRIGHT & STROH.

CENTRE COUNTY.

VAN PELT & SHOOP.

Centre Hall, Pa.

Agricultural implements.

Value in dollars of annual product: about seven or eight thousand dollars.

Whole number of persons employed: 4.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulder	1	......	....	$2 25	......	......	
Machinist (best)	1	......	....	Prop'r.	......	......	
Blacksmith	1	......	....	Prop'r.	......	......	
Pattern-makers and carpenters	2	......	....	1 75	......	......	
Laborer, carter	1	......	....	1 00	......	......	

Remarks.—Our establishment is on rather a small scale, our trade mostly home; build small farm implements, such as plows, horse powers, small threshers, corn planters, &c. Run our machinery by steam (small engine); have foundry, machine shop, wood shop and pump room.

VAN PELT & SHOOP.

PEATERS & LEYTLE, BOALSBURG.

Agricultural implements.

Value in dollars of annual product: $4,500.

Whole number of persons employed: 8.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
* Iron moulders	2	2	....	....	......	......	8 mos.
Blacksmiths	1	1	....	$1 75	......	......	....
Pattern-makers and carpenters	2	......	....	1 75	......	......	....

* Moulders worked by the ton—$20 per ton.

PEATERS & LEYTLE.

(Present firm is LEYTLE & BAILEY.)

M. CROWLAND, PHILIPSBURG, PA.

Founder and machinist, saw-mill and mining work in general.

Value in dollars of annual product: $6,850.

Whole number of persons employed: 7.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	1		1	$2 00		$1 00	250 days.
Machinists, (best)	2			2 50			250 "
Do.....(helper)	1			1 25			175 "
Blacksmith	1			2 00			150 "
Pattern-maker and carpenter	1			2 50			150 "
Laborer, carter	1			1 25			250 "

M. CROWLAND.

CHESTER COUNTY.

C. RIDGWAY, COATESVILLE, CHESTER CO., PA.

Iron and brass castings and machinery.

Value in dollars of annual product: $20,000.

Whole number of persons employed: 15.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	2	3		$3 00	$0 66		12 months.
Machinists, (best)	2	1		2 75	66		
Do...(ordinary)	2			2 25			
Blacksmith	1			2 75			
Blacksmiths' helper	1			1 75			
Foreman	1			3 25			
Pattern maker and carpenter	1			2 75			
Apprentice		1			66		

C. RIDGWAY.

EVANS & BAIRD, WEST CHESTER, PA.

Agricultural implements and school furniture.

Value in dollars of annual product: $20,000.

Whole number of persons employed: 20

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men......	No. apprentices,	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth	Time in operation during year....
Iron moulders	3	1	....	$2 00	$ 50	......	10 hours pr. d.
Machinists, (best)	1	....	....	3 00	......	......	......
Do......(ordinary)	3	2	....	2 00	50	......	......
Do......(inferior)	1	....	....	1 50	......	......	......
Do......(helper)	1	....	....	1 50	......	......	......
Blacksmiths	2	....	....	2 00	......	......	......
Do......(helper)	1	....	....	1 50	......	......	......
Foreman	1	....	....	3 00	......	......	......
Engineer	1	....	....	2 00	......	......	......
Pattern-maker and carpenter	1	....	....	2 00	......	......	......
Assistants	3	....	....	2 00	......	......	......
Laborer, carter	1	....	....	1 50	......	......	......
Turner	1	....	....	2 00	......	......	......

EVANS & BAIRD.

Cupola, Chester County, Pa.

W. Hayes Grier:

Dear Sir :—In reply to your enquiry I would say that my shop is small, and owing to the hard times I am not doing much. My business conissts chiefly in the manufacture of plow castings, and doing job work. I keep one moulder and pay him $1 50 per day. The amount of my business done annually will foot up about $1,500.

Respectfully yours,

LEWIS S. MILLEGAN.

COLUMBIA COUNTY.

JACKSON & WOODIN MANUFACTURING COMPANY.

Berwick, Columbia county, Pa.

Manufacturers of cars and car wheels.

Value in dollars of annual product: 334,688.

Whole number of persons employed: 236.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year....
Iron moulders........................	15	....	....	$1 70	....	......	11 months.
Machinists, (best)...................	2	....	....	1 70	....	......	11 "
Do......(ordinary)...............	6	....	....	1 50	....	......	11 "
Do......helpers..................	20	....	8	1 12	....	56c.	11 "
Blacksmiths..........................	18	....	....	1 70	....	......	11½ "
Do......helpers..................	18	....	....	1 12	....	......	11½ "
Foremen..............................	7	....	....	2 70	....	......	11 "
Engineers............................	2	....	....	1 50	....	......	11 "
Patern-makers and carpenters........	45	....	....	1 50	....	......	9 "
Assistants...........................	17	....	10	1 12	....	60c.	9 "
Laborers, carters....................	59	....	....	1 12	....	......	10½ "
Painters.............................	6	....	3	1 12	....	56c.	10½ "

JACKSON & WOODIN MANUFACTURING CO.

GARRICK MALLERY, *Treas.*

BOWERS & MICHAEL, BERWICK, COLUMBIA CO., PA.

Value in dollars of annual product: $5,000.

Whole number of persons employed: 7.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year....
Iron moulder	1	......	1	$2 00	......	$ 75	11 months.
Machinist, (best)	1	......	....	1 75	......	......	
Blacksmith	1	......	....	2 50	......	......	
Foreman	1	......	....	1 75	......	......	
Engineer.............................	1	......	....	1 50	......	......	
Pattern-maker and carpenter.........	1	......	....	1 50	......	......	
Laborer, carter......................	1	......	....	1 25	......	......	

Remarks.—We make castings for all manner of agricultural wares. We make plows, threshing machines, cultivators, corn plows, corn shellers, land rollers, and do all manner of mill work, both in the cast iron and wrought iron department. We do all manner of repairing to reapers and machines of all kinds.

BOWERS & MICHAEL.

LOW & SAVAGE, ORANGEVILLE, PA.

Agricultural implements.

Value in dollars of annual product: $8,000 or $10,000.

Whole number of persons employed: 10.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulder	1			*$18 00			8 mos.
Machinist (best)	1			1 60			"
Do....(helpers)		1	1			$0 50	"
Blacksmith	1			1 50			"
Pattern-makers and carpenters	4			1 50			"
Laborer, carter	1			1 00			"
Apprentices		1	1			0 75	"

* Per ton.

LOW & SAVAGE.

HARMAN & HASSERT, BLOOMSBURG, COLUMBIA CO., PA.

Stoves and plows.

Whole number of persons employed: 4.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	1			$2 00			months.
Machinist, (best)	1			2 00			"
Pattern-maker and carpenter	1			2 00			"
Laborer, carter	1			1 25			"

Remarks—We manufacture stoves and plows, and do general jobbing and repair work.

It is impossible for us to give value of annual product at this time. If it must be done, we will have to make some kind of an estimate. If this has reference to business done in 1875, we were only in operation in November and December in 1875.

HARMAN & HASSERT.

ELK COUNTY.

HYDE, KLINE & CO., RIDGWAY.

W. Hayes Grier.

Dear Sir :—We built our works last fall, and did not do anything in the way of manufacturing last year ; did not get to running until January 1, 1876, so we have no report to make for last year.

Yours respectfully,

HYDE, KLINE & CO.

FRANKLIN COUNTY.

T. B. WOOD & CO., CHAMBERSBURG, PA.

Mill gearing, shafting, pulleys and hangers, and castings of all kinds.

Value in dollars of annual product : $25,000 to $30,000.

Whole number of persons employed : 20 to 25.

The number of each class employed, with the name or title by which they are known to the trade, with the daily wages paid each class, and average time worked in a year :

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices,	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	5	1	....	$2 25	$ 70	......	12 mos.
Machinists, (best)	3	3	....	2 00	70	......	....
Blacksmith	1	......	....	2 00	......	......	....
Do...... (helper)	1	......	....	1 50	......	......	....
Foremen	2	......	....	2 50	......	......	....
Engineer	....	....	1	1 00	......	......	....
Pattern-maker and carpenter	1	......	....	2 00	......	......	....
Laborers, carters	3	......	....	1 25 to 1 50	......	......	....

Remarks.—Brick machine shop, 90 by 41 feet, second story used as pattern room and pattern shop ; brick foundry, 105 by 28 feet ; brick warehouse, 35 by 28 feet ; smith shop, 24 by 20 feet.

T. B. WOOD & CO.

D. L. HOLSINGER'S FOUNDRY AND REPAIR SHOP.

Fayetteville, Franklin county.

Value in dollars of annual product: $7,000.

Whole number of persons employed: 3.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. apprentices,	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulder	1	§1		$1 75			6 months.
Machinist, (ordinary)	1			75			9 "
Turner	1						2 weeks.

§1 year.

D. L. HOLSINGER, *Proprietor.*

THE GEISER MANUFACTURING COMPANY.

Waynesboro', Pa.

Whole number of persons employed: 95.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	13	3	2	$1 75	$0 85	$0 75	10½ months. Average 10 hours.
Machinists (best)	7	3		2 00	0 85		
Do..... (ordinary)	7						
Do..... (helpers)	2					1 00	
Helpers	4		2	1 00	*0 75		
Blacksmiths	5						
Blacksmiths' helpers	2						
Foremen	6						
Engineer	1						
Pattern-maker and carpenter	1						
Assistant	1						
Laborer, carter	1						
Apprentices	5						
Millwrights	2						

* First year.

Remarks.—Wood workmen in finishing shop, 15; painters, 6; wood workmen in getting out material, 16; wheel shop, 2. Daily wages, average $1 75.

J. F. OLLERS, *Sec'y and Treas.*

FULTON COUNTY.

BAIN & CROMER, FORT LITTLETON, FULTON CO., PA.

Plows and plow castings.

Value in dollars of annual product: $4,500.

Whole number of persons employed: 3.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	2			$1 75			
Pattern-maker and carpenter	1			1 50			

BAIN & CROMER.

WM. B. SEYLAR, M'CONNELSBURG, FULTON CO.

Manufacturer of plows and plow castings.

Value in dollars of annual product: $2,000.

Whole number of persons employed: 3.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

Iron moulders, men, 2; daily wages paid men, $1 25; time in operation during year, 6½ months.

Remarks.—I manufactured last year 175 plows, at an average price of $10, and run my shop about 6½ months in the year, and employ two moulders and a plow maker part of the time.

W. B. SEYLAR.

GREENE COUNTY.

C. W. BOWER & SON, WAYNESBURG, GREENE CO., PA.

Plows and country castings.

Value in dollars of annual product: about $2,500.

Whole number of persons employed: 3 all the time, 4 when running regular.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth..........	Time in operation during year...
Iron moulders........................	2	......	1	$2 25	......	......	8 months.
Machinist, (best)	*1	......	......	......	......	......	

* Owner of establishment.

Remarks.—We sell, in addition to what we make ourselves, about $2,000 worth of stoves, grate fronts, &c.

C. W. BOWER & SON.

VESUVIUS MANUFACTURING COMPANY.

Rice's Landing, Greene county, Pa.

Diamond stone and wood saw mills, threshing machines, steam engines, shaftings and pulleys, and general mill furnishings.

Value in dollars of annual product: Not known.

Whole number of persons employed: 16.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year.

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of apprentices........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year....
Iron moulder	1	1	....	$2 00	$0 31½	......	Just a new comp'y; have not been in operation but about six mo. Average time about 9-10.
Machinist (best)	1	4	....	2 50	0 31½	......	
Blacksmith	1	....	....	1 66	....	......	
Blacksmith's helper	1	....	....	1 00	....	......	
Foreman	1	....	....	2 50	....	......	
Engineer	1	....	....	0 96	....	......	
Pattern-maker and carpenter	1	....	....	2 00	....	......	
Laborer, carter	1	....	....	1 25	....	......	
Millwright	1	1	....	2 50	0 31½	......	
Clerk	1	....	....	2 00	....	......	

Remarks.—The manufacturing business at these works previous to the formation of the present company, was millwrighting and general mill furnishing, together with saw mills, turbine water wheels, and repeating threshers. But since the formation of the Vesuvius Manufacturing Company, the manufacturing has been mostly confined to the construction of Diamond stone saw mills, which are just now ready to be put upon the market. What the trade will be has yet to be developed; and whatever it may be, the company has facilities to meet its requirements, even if it prove to be a five or ten thousand dollar mill per month.

The works and machinery was recently appraised at $33,440 10 (thirty-three thousand four hundred and forty dollars and ten cents.)

In my report of the Vesuvius Manufacturing Company's works, one item may lead you into an error. The amount paid apprentices is exclusive of their board which is rated at $4 00 per week.

Respectfully, yours, &c.,
VESUVIUS MANUFACTURING COMPANY.
Per G. W. D.

HUNTINGDON COUNTY.

SAULSBURG, HUNTINGDON COUNTY, PA.

W. HAYES GRIER,
Chief of Bureau of Industrial Statistics:

DEAR SIR:—In former years I was engaged in the manufacture of threshing machines, clover mills, plows and coffins, and usually employed two or three men, and sold from $2,500 to $3,000 worth. But since the panic I employ no men and work by myself.

I have an iron foundry in Petersburg, but I have it leased to parties who will make their own report.

Respectfully yours,

JOB SLACK.

MESSRS. BUPP & GROVE.

M'Connellstown, Huntingdon county Pa.

Manufacturers of plows and castings, generally made in country shops. Not much doing at present in our business; annual product about $800. No hands employed at present.

BUPP & GROVE.

LANCASTER COUNTY.

PERROTTET & HOYT, COLUMBIA, PA.

Blast furnace and rolling mill castings, machinery, gas works and sugar apparatus, steam engines and general machine work.

Value in dollars of annual product: $25,000.

Whole number of persons employed: One-third the capacity during these "times"—say 25.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. apprentices,	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	5	1	1	$2 50 to $3 00	$ 75	$ 50	12 mos.
Machinists, (best)	3			2 50			
Do......(ordinary)	2			2 00			
Blacksmith	1			2 25			
Do......(helper)	1			1 00			
Engineer	1			1 00			
Pattern-makers	2			2 00 to 2 25			
Assistant		1			75		
Laborers, carters	5			1 00			
Brass-founder	1			2 50			
Core-maker, (in foundry)	1			1 75			

Remarks.—The works comprise pattern, smith and machine shops and an iron foundry, with pits at one end for brass foundry, all fitted with good tools and laid out with a view to economy of labor. The works are located at the corner of Commerce street, with a frontage of 220 feet on Bridge street, and occupy about one acre of ground.

Wages are paid in cash, and all bills settled monthly. The works are given our personal supervision, and have been kept running continuously, thus far, during the "hard times." With a revival of the iron interest, we have assurances of more than doubling the amount of the annual products of the past two years.

PERROTTET & HOYT.

LEBANON COUNTY.

E. & J. LIGHT.

Lebanon, Lebanon county.

Foundry—gives employment to 12 men ; wages not given Annual production in value, $10,000.

Characteristics of Establishment.—Foundry, 63x78 feet, 20 feet high, edifice, brick. Carpenter shop, framed wood building, 28x30.

E. & J. LIGHT.

LEHIGH COUNTY.

COLE & HEILMAN, ALLENTOWN, LEHIGH CO., PA.

Manufactures of locomotive boilers, tanks, flue, vertical and cylindrical boilers, blast and steam pipes, stacks, cupolas, stand pipes, &c., &c.

Quantity in measure and value in dollars of annual product: boilers, cylindrical, 52; locomotive, 1; vertical, 1; horizontal, 5; stacks, 20; tanks, 13; &c., &c. $52,000.

Average number of persons employed: 36. Having sometimes as high as 45 at work, and at other times only 13.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year :

OCCUPATION AND CLASSIFICATION.	No. of men......	No. apprentices.	No. youth.......	Daily wages paid men..........	Daily wages paid apprentices...	Daily wages paid youth..........	Time in operation during year...
Boiler makers and riveters,	10			$2 25 to $2 50			264 days.
Helpers and holders on	5			1 40 to 1 50			
Rivet heaters	5		5	50 to 75		$ 75 to $1 50	
Layer out	1			2 50			
Flanger	1			2 50			
Flanger helper	1			1 50			
Blacksmith	1			2 25			
Blacksmith helper	1			1 00			
Foreman	1			2 25			
Engineer	1			1 62½			
Laborers, carters, punches, rollers, &c.	9			1 40 to 1 62½			

COLE & HEILMAN.

BARBER & SON.

Allentown, Pa.

Steam engines, boilers, turbine water wheels, mill and mining machinery.

Value in dollars of annual product: $43,103.

Whole number of persons employed : 42.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year :

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices..	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth..........	Time in operation during year....
Iron moulders	10	3		$2 00	75c		
Machinists, (best) Do.....(ordinary)	9	3		2 00	75c		
Do.....(inferior)	2			1 25			
Boiler-makers	2			2 00			
Do........helper	1			1 40			
Blacksmiths	2			2 50 2 25			
Do.....helper	1			1 50			
Foremen	2			4 00 3 00			
Engineer	1			1 50			
Pattern-makers and carpenters	2			2 25			
Laborers, carters	3			1 40			
Clerk	1			2 00			

Remarks.—During the first nine months of '73 we employed 83 men, paying over one thousand dollars weekly in wages, and turned out $130,000 during the year.

BARBER & SON.

LUZERNE COUNTY.

LEHIGH VALLEY RAILROAD CO.

Wilkesbarre, Pa.

Repair shop.

Whole number of persons employed : 145.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year :

OCCUPATION AND CLASSIFICATION.	No. of men....	No. apprentices..	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth..........	Time in operation during year....
Machinists, (best)	32			$2 62			291½ days.
Do......(ordinary)	11			2 33			291 "
Do......(inferior)	3			1 78			278½ "
Do......(helpers)	6		2	1 71		$ 82	298 "
Do......(apprentices)		2			$1 00		305 "
Boiler-makers	5			2 62			297½ "
Do........helpers	7		1	1 84		1 00	283 "
Blacksmiths	9			2 51			287 "
Do......helpers	11		1	1 67		75	289 "
Foremen	5			3 01			307 "
Engineer	1			2 25			337 "
Pattern-makers and carpenters	10			2 48			279 "
Laborers, carters	11			1 67			277 "
Painters	2			2 50			295 "
Do..apprentice		1			1 35		302 "
Tinners	2			2 50			291 "
Do..helper	1			1 50			282 "
Wipers	12		6	1 50		1 12	323½ "
Watchmen	4			1 82			367½ "

A. MITCHELL,

M. M. and Supt., Wyoming Div , L. V. R. R.

FINCH & CO., SCRANTON, PA.

Manufacturers of steam engines, boilers, mining machinery, castings, &c.

Value in dollars of annual product : probably $25,000.

Whole number of persons employed : 18.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. men	No. apprentices.	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	3			$2 25			
Machinists, (best)	4			2 50 to 3 50			
Do.....(ordinary)	2						
Do.....apprentice		1		1 50			
Boiler makers	2			1 87			
Do......helper	1			1 25			
* Blacksmith							
Foreman	1			3 50			
Pattern-makers and carpenters	2			2 50			
Laborers, carters	2			1 50			

Remarks.—Have been established at this point twenty-one years, and are doing a general foundry and machine business. Manufacturing besides mining machinery, a general line of mill machinery, building castings, stationary engines, boilers, &c. Our specialty, if we may be said to have had any, has been steam circular saw mills. The years '74 and '75, however, having been peculiarly hard on lumbermen, have almost wholly used up that line of work with us, and our losses since the fall of '73 are nearly all in that direction. We can work to advantage about fifty men in our shops with our present facilities. We have a foundry, 40x60 feet; machine shop, 40x80 feet, two stories; pattern shop in second story; boiler and blacksmith shop, 30x50 feet, all frame. Cupola for melting iron, five tons capacity. Our shops are driven by a forty-horse return tubular boiler, and horizontal stationary engine thirty-horse power, all of our own make. We have a heavy boring and turning lathe for large fly wheels and pulleys, and a large planer, with a fair assortment of smaller lathes, planers, drill presses, bolt machines, &c., all good tools and capable of doing a wide range of work. Our ground consists of about 1¼ acres, situated on the line of the Delaware, Lackawanna and Western railroad, city of Scranton. The most important characteristic "of this establishment" is that it has no debt, and always pays its paper at maturity.

FINCH & CO.

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* Our boiler maker is a blacksmith.

G. E. SHERMAN.

Manufacturer of agricultural implements, well-curbs, wagon jacks, self-operating swings, sleigh shoes and miscllaneous castings; also dealer in terra cotta, Averill chemical paint, &c.

Value in dollars of annual product: 1875, about $3,000.

Whole number of persons employed: 2 steady, 1 about one-third time.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

Occupation and Classification.—One iron moulder, at $2 25 per day; 2 pattern-makers and carpenters, at $3 per day. Time in operation during year, 230 days.

Remarks.—The buildings were erected in 1868, for the purpose of manufacturing agricultural implements. The business never was a success. I and my partner tried it for two years, when we dissolved and I am now alone. Money is so close that it is very hard work to make any more than a living.

Respectfully yours,

G. E. SHERMAN.

THE SCRANTON STOVE AND MANUFACTURING COMPANY.

Scranton Pa.

Stoves and hollow-ware.

Value in dollars of annual product: about $75,000.

Whole number of persons employed: 35 to 50.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. apprentices..	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year....
Iron moulders	15	5		*	*		250 days.
Machinists, (best) filers	3			$2 25			260 "
Do......(ordinary) mounters	3	2		2 00	$ 50		260 "
Do......(helpers) grinders	1	2		1 25	50		260 "
Foreman	1			2 75			290 "
Engineer	1			2 25			260 "
Pattern-maker and carpenter	1			2 75			290 "
Assistant	1			1 25			200 "
Cupola and carters	2		1	2 25		$1 00	290 "
Watchman	1			1 25	and	house	Full time.
Accountant	1			2 25			"
Superintendent	1			4 00			

* Piece work.

Remarks.—This company manufactures stoves and hollow-ware almost exclusively—the number of employees is increased and diminished according to the season and the demands of trade.

The moulders are working entirely on piece work, and earn an average of say $3 00 per day, some exceeding $4 and others as low as $2 25.

The number 50 is the full capacity of the shop at present, and 35 about the least number with which the shop can run to advantage at its minimum of production.

The company is managed by a board of directors in connection with a superintendent. The board and its president serve without remuneration.

J. N. PRICE, *Treas.*

DICKSON MANUFACTURING COMPANY.

Scranton and Wilkesbarre, Pa. (Address Scranton, Pa.)

Locomotive and stationary engines, and all kinds of machinery.

Value in dollars of annual product: $532,706.

Whole number of persons employed: 531.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices,	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	28	4	4	$2 30	$ 75		250 days.
Machinists, (best)	77	23	3	2 35	65		
Do......(ordinary)	62			2 15			
Do......(inferior)	32			1 60			
Do......(helpers)	24			1 25			
Boiler-makers	10		1	2 25		$ 90	
Do......(helpers)	19			1 45			
Riveters	9			2 43			
Holders-on	5			1 50			
Flanger	1			3 00			
Do......(helpers	3			1 60			
Blacksmiths	21			2 25			
Do......(helpers)	38			1 55			
Foremen	14			3 90			
Engineers	5			2 20			
Pattern-makers and carpenters	67	1	3	2 10	70	60	
Laborers, carters	38			1 40			
Brass-founder	1			2 93			
Do......(helper)	1			1 80			
Moulders' helpers	34			1 49			
Core-makers	2			1 90			
Cupola tender	1			2 48			

WM. H. PERKINS, *Treasurer.*

WYOMING VALLEY MANUFACTURING CO., WILKESBARRE.

Value in dollars of annual product: $60,000.

Whole number of persons employed: 72.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. apprentices.	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth..........	Tim in operation during year....
Foreman in foundry	1			$4 00			12 months.
Iron moulders	10	2	8	2 30	70	$1 50	
Machinists, (best)	14	6		2 50	70		
Do.....(helpers)	2			1 50			
Boiler maker	1			2 75			
Do.....helpers	1			1 50			
Riveters	2			2 00			
Holder-on	1			1 56			
Blacksmiths	3			2 22			
Do.....helpers	3			1 75			
Foreman	1			3 25			
Engineer	1			1 75			
Pattern-makers and carpenters	6			2 50			
Laborers, carters	5			1 60			
Apprentices	1				50		

Book keeper, 1, $1,020 per year; manager, 1, $1,800 per year; superintendent, 1, $1,200 per year.

Remarks.—We build narrow gauge and mine locomotive stationary engines, mine pumps, screens, coal breakers, and all kinds of mine machinery. We also make in foundry all kinds of castings used about mines; car wheels, &c.

WYOMING VALLEY MANUFACTURING CO.,
Wm. L. Stewart, *Manager.*

THE UNION STOVE AND MANUFACTURING COMPANY.

Pittston, Luzerne county, Pa.

Manufacturers of stoves, hollow-ware and light castings.

Value in dollars of annual product: $50,000.

Whole number of persons employed; 33.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year;

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices,	No. of youth....	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid youth	Time in operation during year....
Iron moulders..........................	10	5	....	Piece w'k	Piece w'k	......	250 dys
Machinists, (ordinary)...............	2	....	....	$2 25	....	.....	300 "
Foreman..............................	1	....	....	3 00	....	......	300 "
Engineer..............................	1	....	....	2 00	....	......	300 "
Pattern-makers and carpenters......	2	....	....	2 25	....	......	300 "
Fitters................................	5	....	....	2 25	....	......	300 "
Laborers and assistants..............	5	2	....	2 00	50 cts.	......	300 "

Remarks.—This concern is devoted almost exclusively to the manufacture of stoves, ranges and hollow-ware; we use for that purpose between four and five hundred tons of American pig iron.

UNION STOVE AND MANUFACTURING CO,

Jno. D. Green, *Super't.*

VULCAN IRON WORKS, WILKESBARRE.

Mining machinery.

Value in dollars of annual product: $145,540.

Whole number of persons employed: 85.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices.	No. of youth	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders..........................	14	3	....	$2 35	$1 00	......	291 days.
Machinists, (best)..................	2	6	....	2 75	87	......	"
Do.....(ordinary)..............	13	6	....	2 30	......	......	"
Do.....(helpers)...............	3	....	....	1 00	......	......	"
Boiler makers......................	3	....	....	2 50	......	......	"
Do......helpers.............	2	....	....	1 60	......	......	"
Riveter............................	1	....	....	......	75	......	"
Blacksmiths.......................	4	....	....	2 45	......	......	"
Do....helpers................	4	....	....	1 65	......	......	"
Foremen..........................	2	....	....	3 37	......	......	"
Pattern-makers and carpenters......	6	....	....	2 57	......	......	"
Laborers, carters..................	25	....	....	1 65	......	......	"
Teamster..........................	1	....	....	1 80	......	......	"
Watchman.........................	1	....	....	1 60	......	......	348 days.
Superintendent....................	1	....	....	6 66	......	......	291 days.
Draughtsman......................	1	....	....	5 00	......	......	"
Assistant draughtsman............	1	....	....	2 75	......	......	"
Book keeper......................	1	....	....	4 00	......	......	"

Remarks.—These works were incorporated 1866, and consist of the following shops: one machine shop, 75x150 feet; one foundry, 50x16 feet; one blacksmith shop and boiler shop, 66x130 feet; one pattern shop, 40x80 feet; one brass foundry, 24x24; one pattern stove house, 40x60 feet. They are all brick buildings, constructed in the most substantial manner, and equiped with machinery for doing the heaviest class of work. Sidings from the Lehigh Valley railroad run into the works, so that cars can be directed into any department. The class of work done embraces mining machinery of every description.

VULCAN IRON WORKS.
Per E. H. JONES, *Superintendent.*

SCRANTON BRASS WORKS.

Scranton, Pa.

Value in dollars of annual product: $13,882 16.

Whole number of persons employed: 11.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. apprentices,	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year.
Brass moulder	1			$2 00			About 24 days per mo.
Machinists, (best)	2			3 00 2 50			" 24 " " " 24 " "
Do (ordinary)	2			1 75 1 50			" 24 " " " 24 " "
Blacksmith	1			2 50			" 4 " "
Forman	1						
Engineer	1						
Pattern-maker and carpenter	1			2 00			About 7 days per mo.
Apprentices		3			$ 66 83 1 00		" 24 " " " 24 " " " 24 " "
Clerk	1			1 00			" 25 " "

Remarks.—That compound of copper and zinc known as brass, ranks with iron and steel in value and usefulness, and as its actual worth becomes known, is superseding them in many important devices. Brass is so easily worked and presents such a beautiful appearance that most small machines are made entirely of this material, while its application is so extensive that the industry has been for some years divided into numerous branches, each giving employment to a large amount of capital and labor. The most important of these is probably that pertaining to fittings for water, gas and steam. The general introduction of these "modern improvements" has given a great impetus to this branch of the brass industries, and in all our cities and large towns may be found establishments devoted to this productive industry.

It is said that the manufacture of these indispensable articles originated in this State. It is here, therefore that we should expect to find this industry in its greatest perfection. This establishment is a fair representative of the best class both in extent and completeness.

JAMES M. EVERHART.
J. J. HILPERT.

FOUNDERS AND MACHINIST.

Wisner & Strong, Pittston, Luzerne county.

Value in dollars of annual product? $50,000.

Whole number of persons employed? 32, sometimes more.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices,	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices...	Daily wages paid youth..........	Time in operation during year...
Iron moulders	5	2		$2 50	$1 00		12 months.
Machinists, (best)	6	3		2 50	1 00		"
Boiler-maker	1			2 25			"
Do......helpers	2			1 75			"
Blacksmiths	2			2 50			"
Do......helpers	2			1 75			"
Foremen	2			3 00			"
Pattern-makers and carpenters	2			2 50			"
Assistant	1	1			1 00		"
Laborers, carters	2						"
Apprentice	1						"

Characteristics of Establishment.—Build engines, boilers, pumps, coal breakers, screens—everything pertaining to mine machinery and its equivalent.

WISNER & STRONG.

LYCOMING COUNTY.

CITY IRON WORKS.

Philip A. Moltz, Williamsport, Pa.

Steam engines and general repairing mills.

Value in dollars of annual product: In the year 1875, about $12,000.

Whole number of persons employed: 7.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. apprentices,	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	2			$2 50			8 months.
Machinists, (best)	2	1		2 25 2 00	$1 00		
Engineer		1					
Pattern-maker and carpenter	1			2 50			
Laborer	1			1 50			

Remarks.—The machine shop is 120 by 40 feet in size, one story high, and is filled with the latest improved machinery, consisting of large boring machines, with a capacity for the largest work; two planers, one for heavy bed plates, and one for lighter work; drills, presses, lathes, and every machine requisite for a first class machine shop.

The foundry is 50 by 50 feet in size, with a large lifting crane and cupola of five tons capacity. The pattern shop is 30 by 30 feet.

PHILIP A. MOLTZ.

MILLSPAUGH BROS.

Williamsport, Lycoming co., Pa.

Wood working machinery.

Value in dollars of annual product: $12,326 58.

Whole number of persons employed: 10.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year :

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices.	No. of youth....	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid youth	Time in operation during year....
Machinists, (best)	3			$2 75			12 months.
Do..... (ordinary)	2			2 25			
Blacksmith	1			2 50			
Do....helper	1			1 75			
Apprentices		3			$1 00		

MILLSPAUGH BROS.

DAVID REID—GENERAL REPAIR SHOP.

Filbert street, Williamsport, Lycoming county, Pa.

Value in dollars of annual product ? $5,000.

Whole number of persons employed ? 12.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year :

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices.	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices ...	Daily wages paid youth.........	Time in operation during year...
Machinists, (best)	2			$3 00			Full time.
Do......(ordinary)	1			2 25			
Do......(helper)	1			1 50			
Blacksmiths	2			2 50			
Do.......helper	1						
Foreman	1			3 00			
Engineer	1			1 00			
Apprentice		1	2	20 00 p. mo			

DAVID REID.

MONTGOMERY COUNTY.

ELLIS, HOFFMAN & CO.

Pottstown, Montgomery county.

Ellis Keystone Agricultural Works.

Value of annual product: $12,000.

Whole number of persons employed: 10.

Wages: machinists, (best) $2 00; ordinary, one helper, one blacksmith, and four pattern-makers, at $1 80 to $2 00. In operation during the year.

Remarks.—Our shop was started in 1861 in a small way by the senior member of the firm, since which time we have been gaining favor and our trade increasing steadily, so that now we are obliged to enlarge our shops and expect by another year to run more than double our present capacity.

ELLIS, HOFFMAN & CO.

CONRAD STONEBACK.

Rahn's station, Montgomery co.

Iron foundry and agricultural works.

Value of annual product: $4,500.

Whole number of persons employed: 3.

Wages: 2 iron moulders, at $1 62½ per day; 1 apprentice, at $1 15.

Time in operation during the year 1875, 6 months.

CONRAD STONEBACK.

SYLVANDALE MACHINE WORKS.

Fairviewville P. O., Montgomery co.

Agricultural machinery.

Value in dollars of annual product: $2,000.

Whole number of persons employed: 4.

Wages: 2 machinists, at $2 00 per day; 2 pattern-makers, at $1 50 per day.

Time in operation, 6 months.

JOHN S. SHRAWDER.

NORTHUMBERLAND COUNTY.

MURRAY, DOUGAL & CO., MILTON, PA.

Freight and mine cars, oil tanks and steam boilers, and bill lumber.

Value in dollars of annual product: $134,152 35.

Whole number of persons employed: 174.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. apprentices,	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Machinist, (best)	1			$2 50			298 dys.
Do.....(ordinary)	2			2 00			
Do.....(inferior)	2			1 65			
Do.....(helpers)	2			1 50			
Boiler-makers	5			2 25			
Do.....(helpers)	10		5	1 25		$ 65	
Sawyers	2			1 75			
Do.....(helpers)	5			1 25			
Bolt-makers	1			1 75			
Bolt-cutters	3			1 10			
Blacksmiths	9			2 00			
Do......(helpers)	11			1 20			
Foremen	5			3 00			
Engineers	3			1 60			
Assistant engineer	2			1 25			
Pattern-maker	1			2 00			
Carpenters	65			1 60			
Laborers	16			1 20			
Carters	3			1 35			
Brass moulder	1			1 50			
Iron moulders	5			1 60			
Core-maker	1			1 60			
Smelter	1			1 60			
Casting cleaners	2		2	1 00		70	

Remarks.—The Milton car works consist of machine shop, foundry, smith shop, two repair shops, boiler shop, erecting shop, planing mill and saw mill, and occupying about six acres of ground.

We have, as you will notice, changed the classification of employees to suit our business. For short periods during the year, we had a large number of men employed, while at other times but very few. In filling up the blank, we have given what we supposed would be the average number of hands for the whole number of days in operation. There is also considerable difference in the wages paid to men in the same class. We have, therefore, put down the average for each class.

MURRAY, DOUGAL & CO.

GEO. ROHRBACK & SONS.

Sunbury, Northumberland, co., Pa.

Agricultural implements and miscellaneous castings.

Value in dollars of annual preduct: $6,000.

Whole number of persons employed: 6.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men....	No. apprentices.	No. of youth....	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation year ....
Iron moulders	2			$2 50			Half time.
Machinist, (best)	1			2 50			
Blacksmith	1			2 00			
Pattern-maker and carpenter	1			2 25			
Apprentices		1			$1 00		

PHILADELPHIA COUNTY.

MORRIS TASKER & CO. (Limited.)

Value in dollars of annual product: about $2,000,000.

Whole number of persons employed: about 650.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. apprentices,	No. of youth	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	39	7	11	$91 00	$5 83	$9 16	300 days.
Machinists, (best)	4	12		10 00	10 00		
Do...... (ordinary)	60			130 00			
Do...... (helpers)	16			18 66			
Boiler-makers	16			32 00			
Do........ helpers	4			5 33			
Riveters	4			8 00			
Flanger	1			2 33			
Blacksmiths	26	4	3	60 66	3 33	2 50	
Do...... helpers	30			40 00			
Foremen	13			54 16			
Engineers	10			18 33			
Pattern-makers and carpenters	15	11		37 50	9 16		
Assistants	3			4 00			
Laborers, carters	300			350 00			
Brass-founders	4			5 00			
Fitters	2			6 66			
Turners	36			60 00			

MORRIS TASKER & CO. (Limited.)

BALDWIN LOCOMOTIVE WORKS.

Bumham, Parry, Williams & Co., Philadelphia. Locomotives.

Value in dollars of annual product: $1,500,000 to $2,000,000.

Whole number of persons employed: 1,200 to 1,800.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices,	No. of youth...	Daily wages paid men..........	Daily wages paid apprentices...	Daily wages paid youth........	Time in operation during year...
Iron moulders	24	....	9	$2 25	......	$ 75	60 hrs wk'y.
Machinists, (best)	217	....	....	2 50	......	......	
Do..... (ordinary)	171	....	68	2 00	......	75	
Do..... (inferior)	92	....	....	1 50	......	......	
Boiler-makers	9	....	....	2 00	......	......	
Do........helpers	106	....	....	1 50	......	......	
Chip and caulking	21	....	....	2 00	......	......	
Riveters	32	....	....	2 00	......	......	
Holders-on	16	....	....	1 50	......	......	
Flangers	9	....	....	2 00	......	......	
Do...helpers	27	....	....	1 50	......	......	
Blacksmiths	98	....	....	2 25	......	......	
Do.......helpers	175	....	....	1 50	......	......	
Foremen	11	....	....	3 84	......	......	
Engineers	9	....	....	2 00	......	......	
Pattern-makers and carpenters	41	....	....	2 33	......	......	
Assistants	10	....	....	1 00	......	......	
Laborers	254	....	....	1 33	......	......	
Carters	12	....	....	1 07	......	......	
Sheet iron workers	20	....	....	2 00	......	......	
Painters	28	....	3	2 25	......	75	
Tank-makers	15	....	....	1 75	......	......	
Brass-founders	8	....	....	2 00	......	......	
Fitters	2	....	....	2 00	......	......	
Turners	20	....	....	2 00	......	......	
Core-makers	4	....	....	1 67	......	......	
Casting cleaners	12	....	....	1 50	......	......	

BUMHAM, PARRY, WILLIAMS & CO.

EDWARD S. BUCKLEY.

Philadelphia, Pa.

Plate iron.

Value in dollars of annual product: $100,000.

Whole number of persons employed: about 60 men.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices.	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Engineers	2			$2 50			About 9 mos.
Laborers, carters	6			1 50			"
Rolling mill hands	50			*			"

* Average daily wages $2 50.

Remarks.—Gray's Ferry plate iron works have been running only in day time, with less than one-half of full number of hands employed. Rolling plate iron from blooms and pig metal purchased for that purpose. Business very dull and unprofitable. Works now idle for want of orders.

EDWARD S. BUCKLEY.

J. P. MORRIS COMPANY, PHILADELPHIA.

Manufacturers of steam engines, boilers and general machinery.

Value in dollars of annual product: $305,000.

Whole number of persons employed: 226 weekly average.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices.	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	22	5		$2 52	$ 68		293 days.
Machinists, (best)	34	12		2 74	69		
Do..... (ordinary)	17			2 26			
Do..... (inferior)	8			1 85			
Boiler-makers	17			2 30			
Do........helpers	10		4	1 64		$ 73	
Flanger	1			3 08			
Blacksmiths	3	2		3 06	75		
Do.......helpers	7			1 76			
Foremen	5			6 21			Yearly av.
Engineers	2			2 04			
Pattern-makers, and carpenters	13	3		2 44	69		
Laborers, carters	59			1 56			
Draftsmen	2			3 33			

JOHN T. MORRIS, *Prest.*

JAMES MOORE, BUSH HILL IRON WORKS.

Sixteenth and Buttonwood streets, Philadelphia.

Value in dollars of annual product: $263,000.

Whole number of persons employed: 220.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, und average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men	No. apprentices,	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Iron moulders	18	6	20	$1 50 to $2 50	$ 50	......	305 dys
Machinists, (best)	23	8	3	2 50	50	......	....
Do...... (ordinary)	10	....	....	2 00	......	......	....
Boiler-makers	30	....	....	2 75	......	......	....
Do...... (helpers)	27	....	....	1 60	......	......	....
Riveters	17	....	....	2 25	......	......	....
Holders-on	7	....	....	1 75	......	......	....
Flangers	3	....	....	3 00	......	......	....
Do...... (helpers)	7	....	....	1 50	......	......	....
Blacksmiths	5	....	....	2 75	......	......	....
Do...... (helpers)	8	....	....	1 60	......	......	....
Foremen	6	....	....	6 00	......	......	....
Engineers	2	....	....	2 00	......	......	....
Pattern-makers and carpenters	7	3	....	2 50	50	......	....
Laborers, carters	6	....	....	1 60	......	......	....
Millwrights	4	....	....	2 50	......	......	....

JAMES MOORE.

JOS. S. LOVERING WHARTON.

S. E. corner Fifteenth and Wood streets, Philadelphia, Pa.

Iron founder and machinist.

Value in dollars of annual product: about $50,000.

Whole number of persons employed: average 50.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year :

OCCUPATION AND CLASSIFICATION.	No. of men	No. apprentices.	No. of youth....	Daily wages paid men.........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	16		1	$2 00		60	
Machinist, (best)	1			2 50			
Do.....(ordinary)	1			2 25			
Do.....(inferior)	1			1 25			
Do.....(helpers)			1			45	
Blacksmith	1			2 00			
Do...helper	1			1 25			
Foremen	1			2 50			
Engineer	1			2 00			
Pattern-makers and carpenters	4		1	2 50		50	
Laborers, carters	23			1 80			

Characteristics of Establishment.—A jobbing shop for machine, architectural and railroad casting up to 10 tons in weight.

JOS. S. LOVERING WHARTON.

SCHUYLKILL COUNTY.

SHOENER & ALLEN, PROPRIETORS.

Tamaqua, Schuylkill co., Pa.

Allen foundry, machine and boiler works.

Value in dollars of product : $101,700.

Whole number of persons employed : January, 84 ; February, 82 ; March, 86 ; April, 109 ; May, 119 ; June, 116 ; July, 114 ; August, 116 ; September, 106 ; October, 80 ; November, 72 ; December, 53. Average, 94.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year.

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices.	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders	11	3		$2 25	75		302 days.
Helpers or laborers	5		1			50	“
Core makers	1			2 00			“
Machinists, (best)	18	8		2 50	87		“
Do......(ordinary)	6	4		2 00	66		“
Do......(inferior)	2			1 50			“
Do......(helper)	1			1 25			“
Boiler makers	2	2		2 25	75		“
Riveters	2		1	1 75		50	“
Blacksmiths	4			2 40			“
Do......(helpers)	4			1 50			“
Foreman	2			4 00			“
Engineer	1			2 50			“
Pattern-makers and carpenters	8	3		2 25			“
Laborer, carter and watchman	3			1 60			“
Book-keeper	1			6 00			“
Draughtsman	1			4 00			“

SHOENER & ALLEN,
Per B.

SNYDER COUNTY.

RHORBACK & RUDY.

Manufacturers of stoves, plows, threshing machines, etc., Selinsgrove, Snyder county.

Value in dollars of annual product: $2,500.

Whole number of men employed: 2.

Wages per day: 1 iron moulder at $1 75; 1 pattern-maker, $2 00.

Remarks.—Iron moulder employed six months in the year 1875, and pattern-maker ten months. The establishment has been in operation for past thirty-five years.

ROHRBACK & RUDY.

SOMERSET COUNTY.

JUDSON S. HARTZELL.

Petersburg Foundry, Addison, Somerset county.

Manufacturers of stoves, plows, castings, etc.

Value in dollars of annual product: $12,000.

Whole number of persons employed: 8—consisting of 2 iron moulders; 1 boiler-maker; 1 blacksmith; 1 helper; 1 pattern-maker and carpenter; 1 plow maker. Average daily wages paid men, $1 50. In operation during the whole year.

Remarks.—While perfectly willing to answer any direct question your Department may see fit to propound, I feel it would be presumptuous to offer suggestions.

Our country is undeveloped. We have no large manufacturing establishments. Comparatively few employees, and no conflict or semblance of conflict between capital and labor.

Our people are all on one great social plane. The farmer, merchant, mechanic and laborer have not discovered any cause or reason for opposition or conflict, and long may it be so.

My establishment is confined to the production of the enumerated articles: plows, stoves, country castings generally. No banks or banking establishments in our section.

We have only one railroad, the Connellsville or P. W. and B., now a part of the great Baltimore and Ohio combination. We are hopeful that the useless and burdensome discriminations against local freights will be discontinued. While very burdensome to the local trade it was of no benefit to the road. If necessary will call the attention of your very useful Department to any future abuses.

Very truly,

J. S. HARTZELL.

C. KRISSINGER, BERLIN, SOMERSET COUNTY, PA.

Stoves, plows, &c.

Value in dollars of annual product: $3,000, for time running.

Whole number of persons employed: 2, regular.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

Iron moulder, 1, at $1 50 per day; engineer and cupola tender, 1, at $1 33⅓. Time in operation, about half the year.

Remarks.—Patterns we pay by the piece ; flasks, &c., we get by the day or job.

O. KRISSINGER.

SUSQUEHANNA COUNTY.

GREAT BEND IRON WORKS.

Great Bend, Susquehanna co., Pa.

Value in dollars of annual product : $14,276.

Whole number of persons employed : 16 was the greatest number.

The number of each class employed, with the name or title by which they are known to the trade, with the daily wages paid each class, and average time worked in a year :

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices,	No. of youth....	Daily wages paid men...........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Iron moulders........................	2	1	....	$2 00 & $2 50	75	....	All the time.
Machinist, (best)................	4	....	....	2 25	......	....	
Do.....(ordinary)	2	....	....	2 00	......	....	
Do.....(helper).................	1	....	....	....	......	....	
Blacksmith	1	....	....	2 50	......	....	
Do...helper....................	1	....	....	1 50	......	....	
Engineer............................	1	....	....	1 50	......	....	
Pattern-maker and carpenter........	2	....	...	2 00	......	....	

Remarks.—This concerns differs little from ordinary machine shops, in fact the only peculiarity about it is the patent engine built here, and as business has been so very dull since we started here, April 1, 1874, we bought what boilers we wanted, for the reason that we could not keep a boiler gang continually employed.

A. W. FOX.

UNION COUNTY.

STAYMAN & ZIMMERMAN:

Mifflinburg, Union county, Pa.

Manufacturers of plows and building materials.

Value of annual product : $9,000.

Whole number of persons employed : 8.

Wages per day: 1 iron moulder, at $1 50; 1 machinist, member of the firm; 2 youths, sons of the firm, at $1; 4 pattern makers, including member of the firm, at $1 50.

Remarks.—The building is a wooden structure, situated at the northern side of the town, on the L., C. and Spruce Creek railroad; it is about 104 feet in length and averages in breadth 38 feet.

We manufacture sash, doors and general house building materials.

In the foundry department plows, drills for blacksmiths and general repair work.

We have a 20-horse power engine and a 2 feet boiler.

In giving you the value in dollars of annual product, we have estimated as closely as we can. The amount given you includes everything at its retail value, and in the $9,000 are included also all our expenses, such as wages for hands and material used; that is, if we were to give you a statement of our profits, we would have to deduct all those items from the $9,000.

WASHINGTON COUNTY.

R. B. M'CLURE.

West Middletown, Washington county, Pa.

Manufacturer of threshing machines, cleaning machines, hay rakes, &c.

Value of annual product: $2,000.

Whole number of persons employed: 3.

Wages: 1 machinist for 6 months at $1 75, 1 ordinary machinist, $1 50 for 12 months.

Characteristics of Establishment.—Main building, 32 by 70 feet, three stories high, 16 horse power engine; building for the manufacture of horse power, 30 by 36 feet, two stories high; store and paint shop, 16 by 70 feet; smith shop, 20 by 30 feet. Plenty of room to employ 30 hands, have had that number employed at the same time, machinists, smiths, engineers, helpers, &c. Have been doing a very small business for the last three years. Have been doing business here for over thirty years. Have manufactured to the amount of $35,000 worth in one year.

YORK COUNTY.

PENNSYLVANIA AGRICULTURAL WORKS.

A. B. Farquhar, proprietor, York, Pa.

Agricultural implements and machinery.

Value in dollars of annual product: $200,000.

Whole number of persons employed: 200.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. apprentices.	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth........	Time in operation during year...
Iron moulders	20	5	5	$1 50	$ 50	$ 50	Full time. 10 hours per day.
Machinists, (best)	20	10	10	1 60	50	50	
Do.....(ordinary)	10	....	....	1 25	......	......	
Do.....(inferior)	5	....	....	1 00	......	......	
Do.....(helpers)	2	....	....	1 00	......	......	
Blacksmith	12	2	1	1 50	50	50	
Do...helpers	5	....	....	1 00	......	......	
Foremen	4	....	....	2 50	......	......	
Engineer	1	....	....	1 00	......	......	
Pattern-maker and carpenter	50	....	....	1 75	......	......	
Laborers, carters	38	....	....	1 00	......	......	

Remarks.—The carpenter, machine, blacksmith, foundry and plow handle shops are all supplied with the best and latest improved machinery. A large four story iron front (80 feet) warehouse has been recently erected. A large lumber yard adjoins the factory. Every variety of agricultural implements and machinery is manufactured.

Trade extends over the United States and thoroughout the whole world, about one-third being export.

A. B. FARQUHAR.

YORK MANUFUCTURING COMPANY, YORK, PA.

Bollinger turbine water-wheel, mill machinery and Success wash machine.

Value in dollars of annual product: $30,000.

Whole number of persons employed: 12.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of apprentices..........	No. of youth....	Daily wages paid men..........	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year....
Machinists, (best)	4			$1 90			Whole yr.
Do......(ordinary)	1			1 50			
Blacksmith	1			1 25			
Do......(helper)	1			50			
Engineer	1			1 40			
Pattern-makers and carpenters	2			1 75			
Laborer and carter	1			job.			
Clerk	1			$2 00			
President	1			4 00			

YORK MANUFACTURING CO.
Per G.

MANUFACTURES—IRON FOUNDRIES AND MACHINE SHOPS.

NAME OF COMPANY.	Iron moulders	Pay per day	Machinists, (best)	Pay per day	Machinists, (ordinary)	Pay per day	Machinists, (inferior)	Pay per day	Machinists, helpers	Pay per day	Boiler-makers	Pay per day	Boiler-makers, helpers	Pay per day	Riveters	Pay per day	Holders-on	Pay per day	Flangers	Pay per day
Allegheny county—																				
Totten & Co	13	$2 16	3	$2 25	5	$2 00	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bissell & Co	20	2 25	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mackintosh, Hemphill & Co	13	2 50	9	2 50	9	2 25	....	....	....	....	....	....	....	....	....	....	....	....	....	....
A. Hartupee	10	2 50	16	2 50	18	2 00	2	1 66	4	1 20	....	....	....	....	....	....	....	....	....	....
Armstrong & Hutchinson	....	....	8	3 00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Graff, Hugus & Co	25	2 00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Robert Lea	1	3 00	3	2 75	1	2 25	....	....	1	2 00	....	....	....	....	....	....	....	....	....	....
Anderson, Maxwell & Co	3	2 25	3	2 40	4	2 25	4	1 00	1	1 50	6	2 25	3	$1 25	....	....	....	....	....	....
Armstrong county—																				
Anderson & Marshall	3	2 25	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Beaver county—																				
A. T. Wolf & Co	17	2 75	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Beaver Falls Co-operative Foundry,	12	$3 to 4	1	2 50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Merrick & Co	3	2 75	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Fallston Foundry & Machine Shop,	1	2 50	1	2 50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lancaster county—																				
Perrotet & Hoyt	5	3 50	3	2 50	2	2 00	....	....	....	....	....	....	....	....	....	....	....	....	....	....
**Berks county—*																				
J. H. Sternbergh	....	....	5	2 00	3	1 75	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bedford county—																				
Shires & Jordan	1	1 93¾	1	1 75	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Frederick Felton	2	1 50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Carbon county—																				
Albright & Stroh	5	2 25 and 2 00			7	2 00	5	1 35 to 1 68	1	1 25										
Centre county—																				
Van Pelt & Shoop	1	2 25																		
Peaters & Little	2	$20 pr ton.																		
M. Crowland	1	2 00	2	2 50					1	1 25										
Chester county—																				
C. Ridgway	2	3 00	2	2 75	2	2 25														
Evans & Baird	3	2 00	1	3 00	3	2 00	1	1 50	1	1 50										
Cambria county—																				
Johnston Mechanical Works	4	1 66	3	2 73	1	1 70														
Miller & Hubner	2	2 25																		
Columbia county—																				
Jackson & Woodin	15	1 70	2	1 70	6	1 50			20	1 12										
Bowers & Michael	1	2 00	1	1 75																
Low & Savage	1	$18 pr ton.	1	1 60																
Harmon & Hassert	1	2 00	1	2 00																
Franklin county—																				
J. B. Wood & Co.	5	2 25	3	2 00																
D. L. Holsingers	1	1 75			1	1 75														
Geiser Manufacturing Co.	13	1 75	7	2 00					2	1 00			4	1 00						
Fulton county—†																				
Bain & Cromer	2	1 75																		
Wm. B. Seylar	2	1 25																		
Greene county—																				
C. W. Bower & Son	2	2 25																		
Vesuvius Manufacturing Co.	1	2 00	1	2 50																
Lycoming county—																				
City Iron works	2	2 50	1	2 25	1	2 00														
Millspaugh Bros.			3	2 75	2	2 25														

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* Berks county—1 box maker, $1 25; 2 packers, $1 50; 15 bolt and nut makers, (piece work); 13 boys in bolt and nut department; 1 clerk, $5 00; 1 assistant, $1 00.

MANUFACTURES—IRON FOUNDRIES AND MACHINE SHOPS—CONTINUED.

NAME OF COMPANY.	Iron moulders	Pay per day	Machinists, (best)	Pay per day	Machinists, (ordinary)	Pay per day	Machinists, (inferior)	Pay per day	Machinists, helpers	Pay per day	Boiler-makers	Pay per day	Boiler-makers, helpers	Pay per day	Riveters	Pay per day	Holders-on	Pay per day	Flangers	Pay per day
Lycoming county—Continued.																				
Daniel Reid			2	$3 00	1	$2 25			1	$1 50										
Luzerne county—																				
Lehigh Val. R. R. Co.'s Repair Shop,			32	2 62	11	2 33	3	$1 78	6	1 71	5	$2 62	7	$1 84						
Finch & Co.	3	$2 25	4	3 00	2	2 25					2	1 87	1	1 25						
G. E. Sherman	1	2 25																		
Scranton Iron Manufacturing Co.	15	Piece work.	3	2 25	3	2 00	1	1 25												
Dickson Manufacturing Co.	28	2 30	77	2 35	62	2 15	32	1 60	24	1 25	10	2 25	19	1 45	9	$2 43	5	$1 50	1	$3 00
Wyoming Valley Manufacturing Co.	10	2 30	14	2 50					2	1 50	1	2 75	1	1 50	2	2 00	1	1 50		
Union Stove Manufacturing Co.	10	Piece work.			2	2 25														
Vulcan Iron Works	14	2 35	2	2 75	13	2 30			3	1 00	3	2 50	2	1 60	1	0 75				
Scranton Brass Works	1	2 00	2	2 75	2	1 63														
Wisner & Strong	5	2 50	6	2 50							1	2 25	2	1 75						
Lehigh county—																				
Cole & Heilman											10	2 50	1	2 50	5	0 62	5	1 45	1	2 50
Barber & Son	10	2 00	9	2 00			2	1 25			2	2 00	1	1 40						
Northumberland county—																				
Murray, Dougal & Co.	10	1 60	1	2 50	2	2 00	2	1 65	2	1 50	5	2 25	10	1 25	2	1 75	5	1 25	1	1 75
Geo. Rohrback & Sons	2	2 50	1	2 50																
Montgomery county—																				
Ellis, Hoffman & Co.			2	2 00	2	1 80			1	1 80										
Conrad Stoneback	2	1 62																		

Sylvandale Machine Works	....	....	2	2 00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Philadelphia county—																				
Morris, Tasker & Co	39	2 33	4	2 50	60	2 16	....	....	16	1 16	16	2 00	4	1 33	4	2 00	....	....	1	2 33
Baldwin Locomotive Works	24	2 25	217	2 50	171	2 00	92	1 50	....	....	9	2 00	106	1 50	53	2 00	16	1 50	9	2 00
Grays Ferry Plate Iron Works.*																				
J. P. Morris Company	22	2 52	34	2 74	17	2 26	8	1 85	....	....	17	2 30	10	1 64	....	....	....	....	1	3 08
Bush Hill Iron Works	18	2 50	23	2 50	10	2 00	....	....	....	....	30	2 75	27	1 60	17	2 25	7	1 75	3	3 00
Snyder county—																				
Rhorback and Rudy	1	1 75	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Schuylkill county—																				
Shoener & Allen	16	2 25	18	2 50	6	2 00	2	1 50	1	1 25	2	2 25	....	....	2	1 75	....	....	....	....
Somerset county—																				
Judson S. Hartsell	2	1 50	....	....	....	....	....	....	....	....	1	1 50	....	....	....	....	....	....	....	....
C. Krissinger	1	1 50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Susquehanna county—																				
Great Bend Iron Works	2	2 50	4	2 25	2	2 00	....	....	1	1 75	....	....	....	....	....	....	....	....	....	....
York county—																				
Pennsylvania Agricultural Works,	20	1 50	20	1 60	10	1 25	5	1 00	2	1 00	....	....	....	....	....	....	....	....	....	....
York Manufacturing Co	4	1 90	1	1 50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

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* Fifty rolling mill hands at an average of $2 50 per day.

MANUFACTURES—IRON FOUNDRIES AND MACHINE SHOPS—CONTINUED.

NAME OF COMPANY.	Flangers' helpers	Pay per day	Blacksmiths	Pay per day	Blacksmiths' helpers,	Pay per day	Foremen	Pay per day	Engineers	Pay per day	Pattern-makers and carpenters	Pay per day	Assistants	Pay per day	Laborers, carters	Pay per day	Apprentices	Pay per day
Allegheny county—																		
Totten & Co							3	$4 00			2	$2 25			16	$1 75	8	$1 00
Bissell & Co.							1		1								5	1 25
Mackintosh, Hemphill & Co.			2	$2 75	2	$1 75	2	4 00	1	$2 00	3	2 50			14	1 75	4	1 50
A. Hartupee			2	2 75	2	1 50	3	5 00	1	2 00	4	2 50	1	$2 00	16	1 25	5	1 00
Armstrong & Hutchinson			1	3 00					1	2 00	1	3 00					5	1 00
Graff, Hugus & Co.			1				1		1		1				2		15	1 35
Robert Lea									1	2 00							3	1 00
Anderson, Maxwell & Porter			1		1		1	4 00	1	1 50					4	2 00	7	1 00
Armstrong county—																		
Anderson & Marshall							1	4 00							1	1 25		
Beaver county—																		
A. T. Wolf & Co.			1	2 00			1	3 50			2	2 00					5	75
Beaver Falls Co-operative Foundry,							2	3 60	1	1 50	1	2 00			1	1 66	4	1 25
Merrick & Co.											1	2 00					3	1 00
Fallston Foundry and Machine shop,																	2	1 00
Lancaster county—																		
Perrottet & Hoyt			1	2 25	1	1 00			1	1 00	2	2 00	1	75	5	1 00		
Berks county—																		
J. H. Sternbergh			1	1 80	1	80	3	3 50	1	1 75	3	2 00			6	1 25	3	85
Bedford county—																		
Shires & Jordan			1	1 50													1	1 00
Frederick Felton																		

Carbon county—																		
Albright & Stroh	.....	.....	1	1 40	1	1 25	3	2 50 2 75 3 00	.....	.....	2	1 75 and 1 80	....	.....	6	1 25	6	1 00 and 1 50
Centre county—																		
Van Pelt & Shoop	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1 75	.....	.....	1	1 00	.....	.....
Peaters & Lytle	.....	.....	1	1 75	1	1 00	.....	.....	.....	.....	2	1 75	.....	.....	.....	.....	2	75
M. Crowland	.....	.....	1	2 00	.....	.....	.....	.....	.....	.....	1	2 50	.....	.....	1	1 25	.....	.....
Chester county—																		
C. Ridgway	.....	.....	1	2 75	1	1 75	1	3 25	.....	.....	1	2 75	.....	.....	.....	.....	4	66
Evans & Baird	.....	.....	2	2 00	1	1 50	1	3 00	1	2 00	1	2 00	3	2 00	1	1 50	3	50
Cambria county—																		
Johnstown Mechanical works	.....	.....	2	1 70	1	1 10	.....	.....	1	1 30	7	1 79	2	1 50	3	1 18	1	50
Miller & Hubner	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	60
Columbia county—																		
Jackson & Woodin	.....	.....	18	1 70	18	1 12	7	2 70	2	1 50	45	1 50	17	1 12	59	1 12	21	56
Bowers & Michael	.....	.....	1	2 50	.....	.....	1	1 75	1	1 50	1	1 50	1	1 25	.....	.....	1	75
Low & Savage	.....	.....	1	1 50	.....	.....	.....	.....	.....	.....	4	1 50	.....	.....	1	1 00	2	62½
Harmon & Hassert	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2 00	.....	.....	1	1 25	.....	.....
Franklin county—																		
T. B. Wood & Co	.....	.....	1	2 00	1	1 50	2	2 50	1	1 00	1	2 00	.....	.....	3	1 37½	4	70
D. L. Holsingers	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Geiser Manufacturing Company	.....	.....	5	.....	2	.....	6	.....	.....	.....	1	.....	1	.....	1	.....	10	85
Fulton county—																		
Bain & Cromer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1 50	.....	.....	.....	.....	.....	.....
Wm. B. Seylar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greene county—																		
C. W. Bower & Son	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Vesuvius Manufacturing Company,	.....	.....	1	1 66	1	1 00	1	2 50	1	96	1	2 00	.....	.....	1	1 25	6	31½
Lycoming county—																		
City Iron Works	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2 50	.....	.....	1	1 50	1	1 00
Millspaugh Bros	.....	.....	1	2 50	1	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1 00
Daniel Reid	.....	.....	2	2 50	1	1 75	1	3 00	1	1 00	.....	.....	.....	.....	.....	.....	3	20p.m
Luzerne county—																		
Lehigh Val. R. R. Co's Repair Shop,	.....	.....	8	2 51	11	1 67	5	3 01	1	2 25	10	2 48	.....	.....	11	1 67	7	1 00

MANUFACTURES—IRON FOUNDRIES AND MACHINE SHOPS—Continued.

NAME OF COMPANY.	Flangers' helpers	Pay per day	Blacksmiths	Pay per day	Blacksmiths' helpers	Pay per day	Foremen	Pay per day	Engineers	Pay per day	Pattern-makers and carpenters	Pay per day	Assistants	Pay per day	Laborers, carters	Pay per day	Apprentices	Pay per day
Luzerne county—Continued.																		
Finch & Co	....	....	1	$1 87	....	....	1	$3 50	....	....	2	$2 50	....	....	2	$1 50	1	$1 50
G. E. Sherman	....	....	....	....	....	....	....	....	....	....	2	3 00	....	....	....	....	....	....
Scranton Iron Manufacturing Co	....	....	....	....	....	....	1	2 75	1	$2 25	1	2 75	1	$1 25	2	2 25	9	50
Dickson Manufacturing Company	3	$1 60	21	2 25	38	$1 55	14	3 90	5	2 20	67	2 10	4	70	38	1 40	35	70
Wyoming Valley Manufactur'g Co	....	....	3	2 22	3	1 75	2	3 62	1	1 75	6	2 50	....	....	5	1 60	16	1 10
Union Stove Manufacturing Co	....	....	....	....	....	....	1	3 00	1	2 00	2	2 25	....	....	5	2 00	7	50
Vulcan Iron Works	....	....	4	2 45	4	1 65	2	3 37	....	....	6	2 57	....	....	25	1 65	15	87
Scranton Brass Works	....	....	1	2 50	....	....	1	2 50	1	2 00	1	2 00	....	....	....	....	3	87
Wisner & Strong	....	....	2	2 50	2	1 75	2	3 00	....	....	2	2 50	1	1 00	2	1 50	6	1 00
Lehigh county—																		
Cole & Heilman	1	1 50	1	2 25	1	1 00	1	2 25	1	1 62	....	....	....	....	9	1 50	5	75
Barber & Son	....	....	2	2 50	1	1 50	2	3 00 and 4 00	1	1 50	2	2 25	....	....	3	1 40	6	75
Northumberland county—																		
Murray, Dougal & Co	3	1 10	9	2 00	11	1 20	5	3 00	3	1 60	76	1 75	1	1 25	19	1 20	....	....
George Rohrback & Sons	....	....	1	2 00	....	....	....	....	....	....	1	2 25	....	....	....	....	1	1 00
Montgomery county—																		
Ellis, Hoffman & Co	....	....	1	2 00	....	....	....	....	....	....	4	2 00	....	....	....	....	....	....
Conrad Stoneback	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1 15
Sylvandale Machine Works	....	....	....	....	....	....	....	....	....	....	2	1 50	....	....	....	....	....	....
Philadelphia county—																		
Morris, Tasker & Co	....	....	26	2 33	30	1 33	13	4 16	10	1 83	15	2 50	3	1 33	300	1 16	23	83

Baldwin Locomotive Works	27	1 50	98	2 25	175	1 50	11	3 84	9	2 00	41	2 33	10	1 00	266	1 20	70	75
Gray's Ferry Plate Iron Works	....	....	....	....	....	....	....	....	2	2 50	....	....	....	....	6	1 50	....	....
J. P. Morris Company	....	....	3	3 06	7	1 76	5	6 00	2	2 04	13	2 44	....	....	59	1 56	22	72
Bush Hill Iron Works	7	1 50	5	2 75	8	1 60	6	6 00	2	2 00	7	2 50	....	....	6	1 60	17	50
Snyder county—																		
Rhorback & Rudy	....	....	....	....	....	....	....	....	....	....	1	2 00	....	....	....	....	....	....
Schuylkill county—																		
Shœner & Allen	....	....	4	2 40	4	1 50	2	4 00	1	2 50	8	2 25	....	....	3	1 60	22	75
Somerset county—																		
Judson S. Hartzell	....	....	1	1 50	1	1 50	....	....	....	....	1	1 50	1	1 50	....	....	....	....
C. Krissinger	....	....	....	....	....	....	....	....	1	1 33	....	....	....	....	....	....	....	....
Susquehanna county—																		
Great Bend Iron Works	....	....	1	2 50	1	1 50	....	....	1	1 50	2	2 00	....	....	....	....	....	....
York county—																		
Pennsylvania Agricultural Works	....	....	12	1 50	5	1 00	4	2 50	1	1 00	50	1 75	....	....	38	1 00	33	50
York Manufacturing Company	....	....	1	1 25	1	50	....	....	1	1 40	2	1 75	....	....	1	job.	....	....

MANUFACTURES—IRON FOUNDRIES AND MACHINE SHOPS—CONTINUED.

NAME OF COMPANY.	Millwrights	Pay per day	Assistant Millwrights	Pay per day	Brass-founders	Pay per day	Fitters	Pay per day	Turners	Pay per day	Other employees	Pay per day	Coppersmiths	Pay per day	Common laborers	Pay per day	Painters	Pay per day
Allegheny county—																		
Totten & Co.																		
Bissell & Co.							5											
Mackintosh, Hemphill & Co.											1	$2 50						
A. Hartupee																		
Armstrong & Hutchinson																		
Graff, Hugus & Co							1											
Robert Lea																		
Anderson, Maxwell & Porter											1	4 15						
Armstrong county—																		
Anderson & Marshall							1				1	1 66						
Beaver county—																		
A. T. Wolf & Co.																		
Beaver Falls Co-operative Foundry,							3	$2 00			5	3 00						
Merrick & Co.							1	2 00			3	2 00						
Fallston Foundry and Machine Shop,																		
Lancaster county—																		
Perrottet & Hoyt					1	$2 50												
Berks county—																		
J. H. Sternbergh																		
Bedford county—																		
Shires & Jordan																		
Frederick Felton																		

Carbon county—																		
Albright & Stroh											4	$1 50						
Centre county—																		
Van Pelt & Shoop																		
Peaters & Lytle																		
M. Crowland																		
Chester county—																		
C. Ridgway																		
Evans & Baird									1	$2 00								
Cambria county—																		
Johnstown Mechanical Works																		
Miller & Hubner																		
Columbia county—																		
Jackson & Woodin											6	1 12						
Bowers & Michael																		
Low & Savage																		
Harmon & Hassert																		
Franklin county—																		
T. B. Wood & Co																		
D. S. Holsingers																		
Geiser Manufacturing Company											39	1 75						
Fulton county—																		
Bain & Cromer																		
Wm. B. Seylar																		
Greene county—																		
C. W. Bower & Son																		
Vesuvius Manufacturing Company	1	$2 50									1	2 00						
Lycoming county—																		
City Iron Works																		
Millspaugh Bros.																		
Daniel Reid																		
Luzerne county—																		
Lehigh Val. R. R. Co.'s Repair Shop											26	$1 35 to 2 50					2	$2 50

MANUFACTURES—IRON FOUNDRIES AND MACHINE SHOPS—CONTINUED.

NAME OF COMPANY.	Millwrights	Pay per day	Assistant Millwrights	Pay per day	Brass-founders	Pay per day	Fitters	Pay per day	Turners	Pay per day	Other employees	Pay per day	Coppersmiths	Pay per day	Common laborers	Pay per day	Painters	Pay per day
Luzerne county—Continued—																		
Finch & Co.																		
G. E. Sherman																		
Scranton Iron Manufacturing Co.											4	$1 00 to 4 00						
Dickson Manufacturing Co.					1	$2 93	1	$1 80			37	1 50 to 3 00						
Wyoming Valley Manufacturing Co.																		
Union Stove Manufacturing Co.							5	$2 25										
Vulcan Iron Works											6	1 60 to 6 60						
Scranton Brass Works																		
Wisner & Strong																		
Lehigh county—																		
Cole & Heilman																		
Barber & Son											1	2 00						
Northumberland county—																		
Murray, Dougal & Co.																		
Geo. Rohrback & Son																		
Montgomery county—																		
Ellis Hoffman & Co.																		
Conrad Stoneback																		
Sylvandale Machine Works																		

Philadelphia county—																		
Morris, Tasker & Co.					2	2 50	4	1 66	36	$1 66	14	83						
Baldwin Locomotive Works					8	2 00	2	2 00	20	2 00	35	1 87					28	$2 25
Grays Ferry Plate Iron Works																		
J. P. Morris Company											2	3 33						
Bush Hill Iron Works	4	$2 50																
Snyder county—																		
Rhorback & Rudy																		
Schuylkill county—																		
Shoener & Allen											2	5 00						
Somerset county—																		
Judson S. Hartzell																		
C. Krissinger																		
Susquehanna county—																		
Great Bend Iron Works																		
York county—																		
Pennsylvania Agricultural Works																		
York Manufacturing Company											2	3 00						

MANUFACTURES—FOUNDRIES AND MACHINE SHOPS—CONTINUED.

NAME OF COMPANY.	Value in dollars of annual product	Whole number of persons employed	Average time worked during the year	POSTOFFICE ADDRESS.
Allegheny county—				
Totten & Co	$128,000 00	50	266	Pittsburg.
Bissell & Co	100,000 00	45	9 months	"
Mackintosh, Hemphill & Co.	115,788 06	60	Full time	"
A. Hartupee	200,000 00	100	300 days	"
Armstrong & Hutchinson	31,000 00	16	Full time	Allegheny City.
Graff, Hugus & Co	100,000 00	57		Pittsburg.
Robert Lea	10,630 39	10	1 year	"
Anderson, Maxwell & Porter	60,245 83	35	Steady	Allegheny City.
Armstrong county—				
Anderson & Marshall	7,000 00	6	Full time	Kittanning.
Beaver county—				
A. T. Wolf & Co	50,000 00	30	11 months	Beaver Falls.
Beaver Falls Co-operative Foundry	40,000 00	30	10 months	"
Merrick & Co	9,156 35	11	178 days	New Brighton.
Fallston Foundry and Machine Shop	3,500 00	4	275 days	"
Lancaster county—				
Perrottet & Hoyt	25,000 00	25	12 months	Columbia.
Berks county—				
J. H. Sternbergh	125,000 00	58		Reading.
Bedford county—				
Shires & Jordan	9,577 00	4	8 months	Bedford.
Frederick Felton	3,080 00	1	10 months	Everett P. O.

Carbon county—				
Albright & Stroh	58,837 50	42	300 days	Mauch Chunk
Centre county—				
Van Pelt & Shoop	7,500 00	4		Centre Hall
Peaters & Lytle	4,500 00	8		Boalsburg
M. Crowland	6,850 00	7		Phillipsburg.
Chester county—				
C. Ridgway	20,000 00	15	12 months	Coatesville.
Evans & Baird	20,000 00	20	10 hours per day	West Chester.
Cambria county—				
Johnstown Mechanical Works	3,132 37	25		Johnstown.
Miller & Hubner	2,500 00	3	9 months	"
Columbia county—				
Jackson & Woodin	334,688 00	236	11 months	Berwick.
Bowers & Michael	5,000 00	7	11 months	"
Low & Savage	9,000 00	10	8 months	Orangeville.
Harmon & Hassert	9,000 00	4	9 months	Bloomsburg.
Franklin county—				
T. B. Wood & Co	30,000 00	20	12 months	Chambersburg.
D. S. Holsingers	7,000 00	3	9 mos. . [pr. day.)	Fayetteville.
Geiser Manufacturing Co	7,000 00	95	10½ mos. (av. 10 hrs.	Waynesboro'.
Fulton countg—				
Bain & Cromer	4,500 00	3		Fort Littleton.
Wm. B. Seylar	2,000 00	3	6½ months	M'Connellsburg.
Greene county—				
C. W. Bower & Son	2,500 00	3	8 months	Waynesburg.
Vesuvius Manufacturing Co	Not known.	16	10 months	Rice's Landing.
Lycoming county—				
City Iron Works	2,000 00	7	8 months	Williamsport.
Millspaugh Bros	12,326 58	10	12 months	"
Daniel Reid	5,000 00	12	12 months	"
Luzerne county—				
Lehigh Valley R. R. Co.'s Repair Shop		145	290 days	Wilkesbarre.
Finch & Co	25,000 00	18		Scranton.

MANUFATURIES—FOUNDRIES AND MACHINE SHOPS—CONTINUED.

NAME OF COMPANY.	Value in dollars of annual product....	Whole number of persons employed .	Av'age time worked during the year....	POSTOFFICE ADDRESS.
Luzerne county—Continued.				
G. E. Sherman	$3,000 00	3	230 days.	
Scranton Iron Manufacturing Co	75,000 00	40	260 days.	Scranton.
Dickson Manufacturing Co.	532,706 00	531	250 days.	"
Wyoming Valley Manufacturing Co	60,000 00	72	12 months	Wilkesbarre.
Union Stove Manufacturing Co	50,000 00	33	300 days	Pittston.
Vulcan Iron Works	145,546 00	85	291 days.	Wilkesbarre.
Scranton Brass Works	13,882 16	11	268 days	Scranton.
Wisner & Strong	50,000 00	32	12 months	Pittston.
Lehigh county—				
Cole & Heilman	52,000 00	36	264 days	Allentown.
Barber & Son	43,103 00	42		"
Northumberland county—				
Murray, Dougal & Co.	134,152 35	174	298 days.	Milton.
Geo. Rohrback & Sons	6,000 00	6	½ time.	Sunbury.
Montgomery county—				
Ellis, Hoffman & Co.	12,000 00	10	Full time	Pottstown.
Conrad Stoneback	4,500 00	3	6 months	Rahn's Station.
Sylvandale Machine Works	2,000 00	4	6 months	Fairviewville.
Philadelphia—				
Morris, Tasker & Co	2,000,000 00	650	300 days.	Philadelphia.
Baldwin Locomotive Works	2,000,000 00	1,500	10 hours per day,	"
Gray's Ferry Plate Iron Works.	100,000 00	60	9 months	"
J. P. Morris Company	305,000 00	226	293 days	"
Bush Hill Iron Works	263,000 00	220	305 days	Sixteenth and Buttonwood sts., Phila.

Snyder county—				
Rhorback & Rudy	2,500 00	2	6 months	Selinsgrove.
Schuylkill county—				
Shoener & Allen	101,700 00	94	302 days	Tamaqua.
Somerset county—				
Judson S. Hartzell	2,000 00	7	Full time	Addison.
C. Krissinger	3,000 00	2	½ time	Berlin.
Susquehanna county—				
Great Bend Iron Works	14,276 00	16	Full time	Great Bend.
York county—				
Pennsylvania Agricultural Works	200,000 00	200	Full time	York.
York Manufacturing Co	....	....	Full time	"
	7,759,121 59	5,337		

MISCELLANEOUS MANUFACTURES.

PAUL A. OLIVER, WILKESBARRE—POWDER.

Quantity in measure and value in dollars of annual product: 40,000 kegs of 25 lbs. $90,000.

Whole number of persons employed: 33.

Superintendent 1, $125 per month; engineer 1, $3 50 per day; carpenter 1, $250; blacksmith 1, $2 50; Foreman 1, $2 50; miller 1, $2 25; watchmen 2, $2 00; firemen 2, $2 00; workmen 15, $1 90; teamsters 4, $2 00; coopers 4, $1 90. In operation during the year, 6 months.

Characteristics of Establishments.—The mills are engaged in the manufacture of blasting powder chiefly, under a new process, designed to do away with the loss of life in the manufacture. The machinery is so arranged that only a small quantity passes through each machine at a time, from 25 to 50 pounds, which, being always wet, no serious accident can occur, there being not enough powder in any one place to cause damage or injury to life.

The capacity of mills is 600 kegs per day, of 10 working hours. Unlike other powder mills, there is no powder manufactured at night. The mills start at 7 A. M., and stop at 6 P. M., like any other factory.

Lately they have commenced making rifle powder, under the same process.

Believing this description of the works may be of interest, I have described them thus especially. The cost of works is $185,000.

PAUL A. OLIVER.

LAFLIN POWDER MANUFACTURING COMPANY.

Wilkesbarre, Pa., mining powder.

Quantity in measure and value in dollars of annual product: 68,350 kegs of powder; value $164,000.

Whole number of persons employed: 27.

Superintendent 1, $5 00 per day; foreman 1, $3 00; engineers 2, $2 75; fireman 1, $1 80; machinist 1, $2 75; mill hands 16, $2 00; outside hands 5, $1 75. Time in operation during year—mill No. 1, 11 months; mill No. 2, 5 months.

LAFLIN POWDER MANUFACTURING CO.,
JAMES E. GAY, *Treasurer.*

THE MOOSIC POWDER CO.

Scranton, Pa.—Powder.

Quantity in measure and value in dollars of annual product: 200,000 kegs powder; value about $450,000 per annum.

Whole number of persons employed, 111.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Foreman	1			$2 50			About 7 months.
Machinists	2			3 12½			
Millwright	1			3 33⅓			
Carpenters	12			2 50			
Do.		2			$1 80		
Powder men, first-class	37			2 25			
Powder men, second-class	19			2 00			
Firemen	8			2 00			
Teamsters	10			2 00			
Blacksmith	1			3 00			
Laborers	14		4	1 60		$0 75	

Remarks.—Powder mills at Moosic, Pa., and Jermyn, Pa.

JOHN D. SHERER, *Sec'y.*

KOONS BROS., SHICKSHINNEY, PA.

Straw and manilla paper.

Quantity tons in and value in dollars of annual product: 400 tons, $30,000.

Whole number of persons employed: 13.

Machine tenders 2, $1 40 per day; engineers 2, $1 22; firemen 2, $1 22; bleachers 2, $1 22; teamsters 2, $1 35; finishers, 2 women, 75 cents; foreman 1, $3. In operation during the year, 11 months.

KOONS BROS.

THE BANGOR SLATE COMPANY,

Bethlehem, Pa.

Quantity in measure and value in dollars of annual product: roofing slate about 30,000 squares; value $75,000.

Whole number of persons employed: 200.

Ordinary labor, $1 30 per day; skilled labor, $2 50 and $1 35 per day; 2 assistants, $75 per month; 2 slate counters, $1 75 per day; all men. Time in operation during year, 10 months.

Remarks.—The Bangor Slate Company has been in active operation about 10 years. Quarries are situated in Washington township, Northampton county, Penn'a. Incorporated under the general mining law of Penn'a.

Officers—I. P. Scholl, Pres't; Sam'l Lewis, Sec'y; J. S. Moyer, Treas., and Samuel Straub, Sup't.

J. S. MOYER, *Treas.*

SAMUEL SEEM, EASTON P. O.

Manufacturer of roofing slate.

Value in dollars of annual produot: $6,000.

Whole number of persons employed: 20.

Laborers, $1 50 per day; slate makers from $2 00 to $2 50 per day. In operation during year, 6 months.

Characteristics of Establishment.—Been putting up engines and hoisting machineries during the year caused an interference in working the quarry.

SAMUEL SEEM.

COLUMBIA SLATE COMPANY, SLATINGTON, PA.

Manufacturers of roofing slate.

Value in dollars of annual product: $24,000.

Whole number of persons employed: 40 men and boys.

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of youth....	Daily wages paid men	Daily wages paid youth	Time in operation during year....
Quarry hands	16	......	$2 00	......	Full time.
Blasters hands	8	......	1 50	......	
Common labor hands	12	2	1 40	$ 90	
Engineers, labor	2	......	1 60	......	

Characteristics of Establishment.—Average time worked per day during the year at the Columbia quarry is ten hours for a day. In winter season, days being short, and candle light is not available for our work. The time is cut down to eight and nine hours per day.

The capacity of the quarry would be sufficient to employ more hands, would the trade permit. The demand is not a sufficient guarantee to increase our production for home trade. Nevertheless, there is considerable activity in foreign markets, and the history of this country can chronicle for the first time in this centennial year, exportation of roofing slate to Europe. We have shipped some twenty-five hundred squares, and made engagements for more. Several other parties have also furnished some, making a total of European shipments this spring of about twenty thousand squares.

DR. A. P. STECKEL, *Supt.*

THE LOCKE SLATE CO.

Office, 1126 Market street, Philadelphia. Quarries and factories, Lehigh co., Pa.

Manufacturers of superior quality of unfading blue black roofing slates, log, counting house and school slates, slate flagging, tiling, steps, window sills, burial cases, urinals, &c.

Quantity in measure and value in dollars of annual product: 1,926 sqs. R. slate, at $3 75, $7,222 50; 265,000 rough slate, at $12, $3,180 00; 10,867 F. flagging, at 25 cents, $2,716 75; 282 cases school slate, at $6, $13,092 00. Total, $26,211 25.

Whole number of persons employed: 56.

OCCUPATION AND CLASSIFICATION.	No. of men......	No. youth......	Daily wages paid men..........	Daily wages paid youth..........	Time in operation during year...
Slate sawyers and shavers	8	....	$1 20		250 days.
Factory foremen	2	....	1 80		232 "
" men	5	....	1 45	83 cents	173 days.
" youths	....	4	......		173 "
Quarry foreman	1	....	2 25		276 "
Quarrymen	11	....	2 00		" "
Blasters	3	....	1 70		" "
Laborers	16	....	1 50		" "
Carpenter	1	....	2 25		136 "
Blacksmith	1	....	2 25		300 "
Tool carriers	....	2	......	40	276 "
Clerk	1	....	2 00		300 "
Engineer	1	....	1 80	With overtime.	480 "

The following table shows the sizes of roofing slate, and the number of each size in one square. A square is the number required to cover 100 feet, or 10 feet square, the surface exposed to the weather only being charged for.

SIZES.	No. in one square.	Sizes.	No. in one square.	Sizes.	No. in one square.
12 by 7	457	16 by 10	221	22 by 11	138
12 by 8	400	18 by 9	213	22 by 12	126
14 by 7	374	18 by 10	192	22 by 13	116
14 by 8	327	18 by 11	174	24 by 12	114
14 by 9	291	20 by 10	169	24 by 13	105
16 by 8	277	20 by 11	154	24 by 14	98
16 by 9	246	20 by 12	141	28 by 14	82

Slate—Mr. John C. Karsten, of Alburtis, writes under date of December 15, 1876, that the slate business has revived, and never before was the demand so extensive as at present. The stock on hand of most of the quarries has been sold. D. C. Pratt, of New York city, purchased 10,000 squares from two parties; J. Gould, of New York, has also made arrangements to receive 8,000 to 12,000 squares. The prices received are not so high as formerly, being from $3 60 to $3 75 per square at present; former price, $4 per square by the single car.

All the quarries are now kept busy, and never before since 1870, was the business so brisk as at present, the only drawback being the low price received which necessitates the paying of lower wages than when slate sold at $6 and $7 per square, although the wages have not been reduced in proportion to the price of slate. Laborers, slate-makers and quarrymen can obtain work and make reasonable wages.

S. G. HOLGATE & SON.

Daleville P. O., Luzerne county. White wash brush block factory.

Value in dollars of annual product: $18,000.

Whole number of persons employed: 10 to 12.

Men 5, daily wages, $2 50 to some, and others only $1 75; apprentice 1, wages $50 first year, $100 second year, $150 third year, and $250 the fourth year, at learning the turning trade; youths 5, $25 to $28 per month. Full time, or 12 months.

Remarks—The name of our factory is "White-wash brush block and turning factory." We manufacture yearly, about 6,000 gross white-wash blocks at $3 per gross—$18,000; sometimes more and sometimes less.

Steam power, 50-horse engine; keep our foreman and pay him $2 75 per day.

S. G. HOLGATE & SON.

LEHIGH FIRE BRICK COMPANY.

Catasauqua, Lehigh county, Pa. Manufacture fire brick.

Quantity in tons and value in dollars of annual product: 6,000 to 8,000 tons when in full operation; value, about $90,000.

Whole number of persons employed: about an average of 25 men and boys.

Superintendent 1; foreman 1, $2 00 per day; moulder 1, $1 35; setter 1, $1 20; laborers, men, 18, $1 00; laborers, boys, 3, from 40 to 65 cents, In operation during the year, 10 months.

Characteristics of Establishment.—This establishment, when in full operation, has a capacity of three million brick per annum, employing 60 to 65 men and boys, the product being worth, at present market rates, about $100,000; built in 1868—rebuilt in 1873 with increased facilities.

J. W. THOMAS, *Supt.*

RITTER & SAYLOR, ALLENTOWN, PA.

Fire-brick, clay tuyere, &c.

Quantity in measure and value in dollars of annual product: 1,500,000 brick; $55,000.

Whole number of persons employed: 28.

Men 21, average daily wages $1 10; youths 7, average daily wages 60 cents; time in operation, 12 months.

Remarks.—Our capacity is 3,000,000 brick annually, and product over $100,000 in ordinary times.

RITTER & SAYLOR,
Per W. P. HUBEE, *Sup't.*

WOODLAND FIRE BRICK COMPANY. (Limited.)

Woodland, Clearfield county, Pa. Fire brick.

Value in dollars of annual product: $50,000.

Whole number of persons employed: 80.

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of youth....	Daily wages paid men.........	Daily wages paid youth	Time in operation during year....
Superintendents	2	....	$2 37	....	280 days.
Cerk	....	1	....	$2 00	
Engineers	2	....	1 91 1 70	....	
Setters	2	....	1 48 1 27	....	
Brick burners	4	....	1 48	....	
Pattern-maker	1	....	2 00	....	
Millers	2	....	2 00	....	
Moulders	2	....	2 20	....	
Pressers	4	....	1 64	....	
Stockbreaker	1	....	1 48	....	
Clay miners	19	....	1 70	....	
Coal miners	8	....	2 00	....	
Clay haulers	2	....	3 00	....	
Coal haulers	....	....	3 25	....	
Moulder terra cotta ware	1	....	2 12	....	
Laborer	1	....	2 00	....	
Laborer	1	....	1 70	....	
Laborers	7	....	1 27	....	
Laborers	6	....	1 00	....	
Laborers	....	2	....	85	
Laborer	....	1	....	75	
Laborer	....	1	....	59	
Table boys	....	6	....	57	
Press boys	....	4	....	50	

Characteristics of Establishment.—Have two works, situated about one-half mile apart. Each capable of producing 8,000 to 10,000 brick per day when run on double turn. Make fire brick for all purposes where they are required, including blast furnaces, rolling mills, steel works, &c., &c.

P. O. BLATTENBERGER, *Sec'y.*

THOS. WEISS & BRO., BETHLEHEM, PA.

Shovels, scoops and spades.

Value in dollars of annual product: about $20,000.

Whole number of persons employed: 12 to 15.

Men 5, daily wages $2; youths 7 to 10, daily wages 50 cents to $1; 1 foreman $50 per month; in operation 250 days; 1 days' work, 9½ hours.

Characteristics of Establishment.—Most work done by the piece. Building consists of one brick shop 140 by 30 feet, one story; one store-house 18 by 20 feet, two stories; one office, brick, 18 by 12 feet; one handle shed 30 by 15 feet; this lot is 120 by 180 feet, facing on Lehigh Valley railroad.

LEHIGH SHOVEL WORKS,
THOS. WEISS & BRO., *Proprietors.*

PULASKI CARTER.

Providence, Luzerne co., Pa.

Axes, scythes, edge tools, railroad and mining tools.

Value in dollars of annual product: $25,000.

Whole number of persons employed: 23.

OCCUPATION AND CLASSIFICATION.	No. of men....	Daily wages paid men	Time in operrtion during year ...
Axe forgers	2	Average $3 00	220 days.
" strikers	2	" 2 00	220 "
To finish after forging	4	" 2 00	250 "
Scythe makers	4	" 2 75	200 "
Finish scythes for market	3	" 2 25	200 "
Tool maker	1	" 3 00	100 "
Helper for tool maker	1	" 2 00	100 "
Iron maker	1	" 3 00	150 "
Jobber	1	2 50	250 "
Helper for jobber	1	1 75	250 "
Carpenter	1	2 00	280 "
Teamster	1	1 75	280 "
Laborer	1	1 50	280 "

To W. HAYES GRIER,

Chief of Bureau of Industrial Statistics:

DEAR SIR:—In reporting on characteristics of this establishment, have to say that so far as practicable the operations are conducted on the division of labor principle, and usually by the piece or dozen, and in reporting by the day have, as far as possible, brought the usual amount paid by the piece per day into day's work, and believe it will very closely represent the object to be attained by your communication.

The establishment is located on the left bank of the Lackawanna river, in city of Scranton, originally in the township and more recently in the borough of Providence, in Luzerne county, and known as the "Capouse Works." The present proprietor moved from Windham county, Connecticut, in the summer of 1841, and commenced the manufacture of scythes in a small way, employing two men and a boy, with one trip hammer and one grind stone. The manufacture of axes was begun in 1843, and from time to time other industries of a similar character were added, including heating furnaces and hammers, for manufacturing scrap iron into bars and drafts. There are now 14 trip hammers, 7 grind stones, with polishing works and other machinery and tools to correspond. The power was originally water only (and independent wheels, which accounts for the difference in time of workmen for the last year. We are in operation about 10 months a year.) In 1871 an 80-horse steam power was added to supplement the water in dry season. In the fall of 1864 the works were nearly eradicated by fire, and rebuilt in 1865. The business has severely felt the general stagnation of trade for the past year, and especially in the demand for mining and lumbering tools, while it has been found quite impossible to work up scrap at the present price of bar iron.

All of which is respectfully submitted.

PULASKI CARTER.

ALEX. FASTER & CO., PHILADELPHIA, PA., (STEEL.)

Quantity in measure and value in dollars of annual product: 136 tons; $42,935 06.

Whole number of persons employed: 14.

Two bosses, 1 clerk, 1 engineer, 1 carpenter, 1 blacksmith, 1 hammer man, 1 melter and 6 helpers—total, 14; time in operation 11 months.

Remarks.—Work commences at seven A. M. and ceases at about half past five P. M., and on Saturday at half past four o'clock.

Wages is paid every Saturday evening. Preference is always given to sober men. All lawful debts are paid.

It is one of our characteristics to respond to all such communications as the one now before us.

Very respectfully,

ALEX. FASTER & CO.

BLAIR IRON AND STEEL COMPANY, PITTSBURGH.

Iron sponge and open hearth stoves

Quantity in measure and value in dollars of annual product: 9 months, 1,145,679 pounds steel ingots; $30,000.

Whole number of persons employed, 68.

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of youth....	Daily wagos paid men...........	Daily wages paid youth.........	Time in operation during year....
Melter	1		$8 00		9 months
Assistant melter	1		5 00		
Helpers for melters	6		1 75		
Producer men at melting furnace	4		1 85		
Pitmen	3		1 60		
Pull-up boys		2		$0 75	
Balling up sponge	2		1 75		
Helpers for balling up sponge	3		1 75		
Foreman reducing furnaces	1		3 00		
Assistant foremen.....do	1		1 50		
Producer men.........do	2		1 85		
Engine boys		2		1 10	
Pit foreman	1		4 00		
Moulders	2		2 00		
Ladlemen	2		2 50		
Crane and press boys		4		75	
Watchman	1		1 60		
Day engineer	1		2 00		
Fireman	1		1 10		
Night engineer	1		1 60		
Blacksmith	1		3 00		
Helper to blacksmith	1		1 75		
Millwright	1		3 25		
Carpenter	1		2 50		
Teamster	1		1 75		
Laborers	21		1 25		

The company was sold out in October, 1875, and ceased operations.

JAMES LAPPAN & CO., PITTSBURGH, PA.

Boilers, stills, tanks, &c.

Value in dollars of annual product: $15,000.

Whole number of persons employed: 20.

OCCUPATION AND CLASSIFICATION.	No. of men....	No. apprentices,	No. of youth	Daily wages paid men	Daily wages paid apprentices....	Daily wages paid youth	Time in operation during year...
Boiler-makers	10			$2 50	$1 60	$ 66⅔	10 mos.
Sheet iron worker	1						
Helpers	5						
Heater boys			2				
Apprentices		2					

Characteristics of Establishment.—Shop 80 feet by 90, one story frame, with engine and boiler. Steam punch, rolls, drill presses and shears.

JAMES LAPPAN & CO.

IRON CITY BRIDGE WORKS.

Lock box, No. 469, Pittsburgh, Pa.

Iron bridges.

Value in dollars of annual product: $50,000 to 150,000, last year $50,000.

Whole number of persons employed: Last year only partly in operation, only 36 men employed.

OCCUPATION AND CLASSIFICATION.	No. of men......	Daily wages paid men..........
Blacksmiths	4	$2 50
Helpers	4	1 66½
Riveters	8	1 75
Fitters	7	1 83
Laborers	7	1 50
Carpenters	4	2 66
Foremen	2	4 50
Civil engineer	1	4 00

C. J. SCHULTZ,
Prop. Iron City Bridge Works.

M'KEE & FULLER, CATASAUQUA, LEHIGH COUNTY, PA.

Railroad car wheels.

Value in dollars of annual product: $265,000.

Whole number of persons employed: from 125 to 150.

Men from 120 to 130, daily wages, laborers $1 25, mechanics $2 25 to $2 75; youths average about 15, daily wages 60 to 75 cents; time in operation, about half time.

M'KEE & FULLER.

HARRISBURG CAR MANUFACTURING CO.

Harrisburg, Pa.

Freight cars.

Value in dollars of annual product: Varying from $400,000 to $2,500,000.

Whole number of persons employed: Varying from 25 to 1,000.

Characteristics of Establishment.—None but men and youth are employed, the number varying as per business in hand. Changes are so frequent and varied that no classification can be made covering a year. Time books and pay rolls for any given week would be definite, but only for the week named.

Wages vary from 5 to 10 cents per hour for boys, and from 10 to 40 cents per hour for men. Time is only rated by us in hours, computing pay as per laws of the State, making eight hours a day's labor, consequently none are employed by the day.

W. T. HILDRUP, *Supt.*

PORTER, BELL & CO.

Pittsburg, Pa.

Builders of light locomotives.

Quantity in measure and value in dollars of annual product: About 30 locomotives and about $140,000. Annual sales somewhat less, some engines being part finished or finished on stock. Capacity twice the above.

Whole number of persons employed: 115; full force would be 200 to 225.

The number of each class employed, with the name or title by which they are known in the trade, with the daily wages paid each class, and average time worked in a year:

OCCUPATION AND CLASSIFICATION.	No. of men......	No. apprentices,	No. of youth....	Average daily wages paid men..	Daily wages paid apprentices....	Daily wages paid youth.........	Time in operation during year †..
Machinists	32	26	1	$2 05, from 1 40 to 3 00	$58\frac{1}{3}$ to $91\frac{2}{3}$c	$1 00	......
Smiths and helpers*	11	....	1	....	....	90	......
Boiler-makers and sheet workers	10	1	1	2 00	$58\frac{1}{3}$ to $91\frac{2}{3}$c	90	......
Carpenters and pattern-makers	7	....	..	2 00	....	......	......
Foundrymen	7	1	..	2 00	$83\frac{1}{3}$c	......	......
Laborers	5	....	..	1 60	....	......	......
Foremen	6	....	..	4 00	....	......	......
Clerks, draftsmen, &c	6	....	..	2 60	....	......	......

*Smiths, $2 50; helpers, $1 50.

† Whole year except holidays, &c., and say ten days for taking stock, &c. Part of time at ten hours and part at eight and nine hours per day.

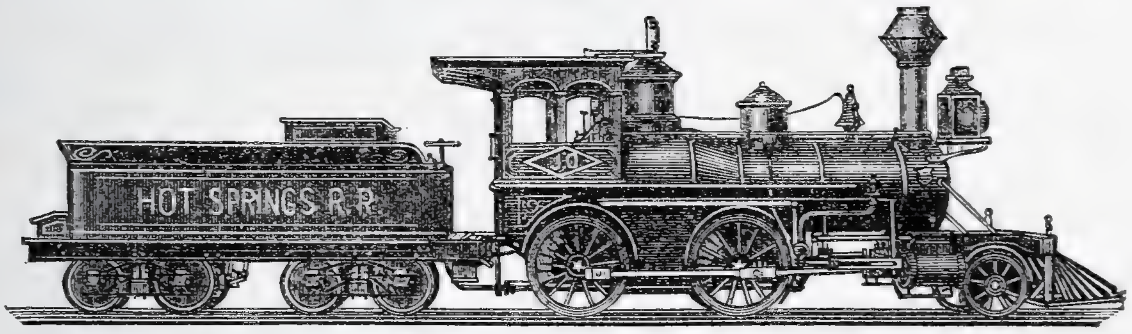
Apprentices serve three years and get $128 bonus at termination of time.

W. Hayes Grier, Esq.,

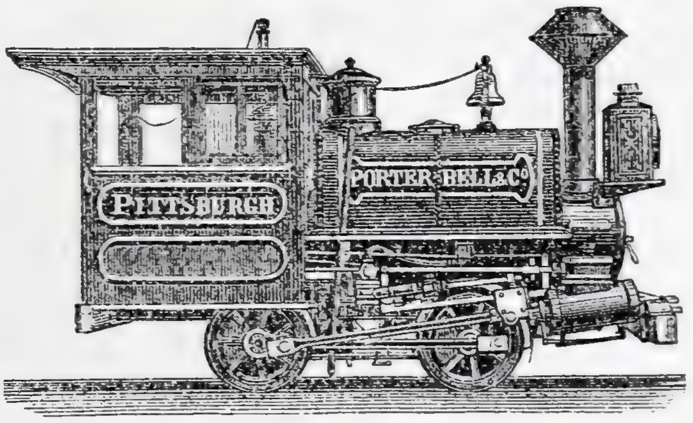
Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

Dear Sir:—Enclosed we hand you the report requested:

Characteristics of Establishment.—Our exclusive specialty is the manufacture of light locomotives. These are used for a great variety of purposes where large locomotives are impracticable. Among the principal classes of work for which our light locomotives are used, are the following: narrow gauge railroads, light railroads of standard gauge, shifting, construction and contractor's use, coal, oar and lumber roads, iron furnaces and mills,



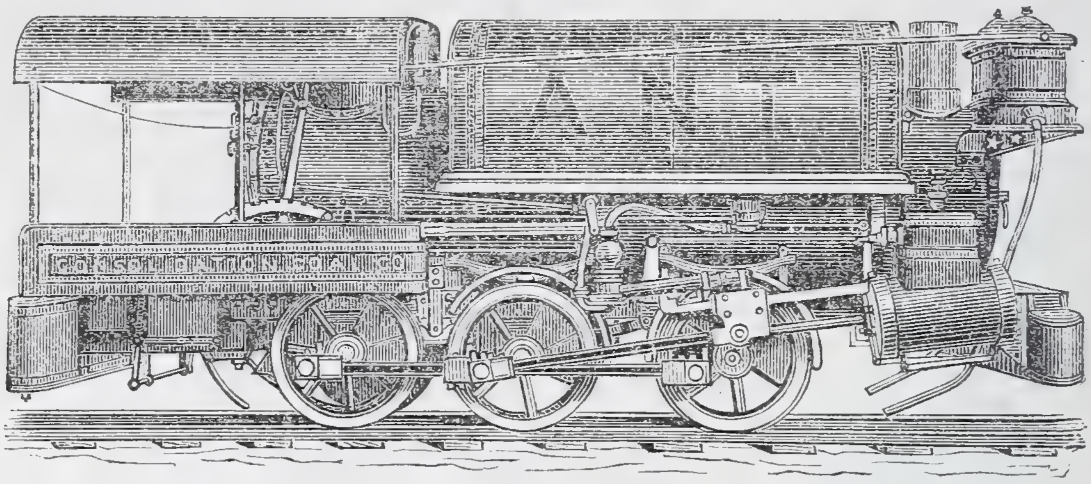
Narrow Gauge Passenger Engine.



Shifting Engine.

street railways, and inside hauling in mines. We build about fifty different sizes and styles, ranging from 7x12 to 14x20 cylinders, and from 8,000 to 55,000 pounds weight.

We enclose three cuts, the first of which shows our larger style of narrow gauge passenger locomotive, the second a four-wheel tank locomotive, and the third a six wheel mine locomotive. Our trade extends to all parts of the United States, as well as to Canada, Cuba and South America, and the falling off in our business for the past year or more is an indication of the wide extent of business depression. The greater number of our locomotives are for narrow gauge, and we believe that the economy of this gauge for a great variety of purposes and localities will have considerable influence in stimulating general industry.


Mine Engine.

Very respectfully,

PORTER, BELL & CO.

Pittsburgh, Pa., *May* 26, 1876.

THE PITTSBURGH CAR WORKS, PITTSBURGH, PA.

Railroad freight and coal cars.

Value in dollars of annual product: $140,000.

Whole number of persons employed: 50

One foreman at $5 per day; 2 machinists at $3 per day; 5 blacksmiths at $2 per day; 30 carpenters at $1 85 per day; 12 laborers at $1 25 per day; time in operation, 12 months.

THE PITTSBURGH CAR WORKS,

J. R. Wilson, *President.*

ATWOOD & M'CAFFREY, PITTSBURGH, PA.

Brass-founders and iron pipe fitters.

Value in dollars of annual product: $133,844 94.

Whole number of persons employed: 36.

OCCUPATION AND CLASSIFICATION.	No. men	No. of youth	Daily wages paid men	Daily wages paid youth	Time in operation during year.
Foreman	1		$3 66		For 120 days worked 8 hours per day. For 189 days worked 10 hours per day.
Engineer	1		3 20		
Blacksmith	1		2 83		
Pipe fitters	4		2 62		
Brass moulders	2		2 50		
Pattern-maker	1		2 50		
Machinists	13		2 36		
Driver	1		1 83		
Blacksmith's helper	1		1 66		
Laborer	1		1 50		
		10		$1 25	

ATWOOD & M'CAFFREY.

C. G. HUSSEY & CO., PITTSBURGH.

Copper and brass rolling mills.

Quantity in measure and value in dollars of annual product: 800 tons; $550,000.

Whole number of persons employed: 80 men and boys.

Men 70, average daily pay $2; youths 10, daily wages $1; time in operation, all year.

Remarks.—We receive copper from the smelting works on Lake Superior, in the shape of cakes and ingots. The cakes vary in weight from 150 to 600 pounds. We re-cast at our works into cakes as large as 2,500 pounds, and from them we roll sheets of various sizes, some very large. Ingots with spelter we make brass, which is rolled into sheets for general purposes, and also for the production of brass kettles.

C. G. HUSSEY & CO.

HUSSEY, WELLS & CO., PITTSBURG, PA.

Manufacturers of all descriptions of cast steel.

Quantity in measure and value in dollars of annual product: 4,622 tons of 2,000 pounds each; $925,000.

Whole number of persons employed: from 350 to 400.

Remarks.—All our skilled workmen are paid by the ton, many of them being contractors and employing men themselves. It is impracticable to make any estimate of their daily earnings. In operation about 300 days.

HUSSEY, WELLS & CO.

ANDERSON & WOODS, PITTSBURGH, PA.

Value in dollars of annual product: $917,300.

Whole number of persons employed: 228.

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of youth....	Daily wages paid men..........	Daily wages paid youth.........	Time in operation during year...
Foremen rake shop	3	....	$9 75	......	7 mos.
Workmen "	14	6	28 00	$5 25	7 "
Hammermen	5	....	35 00	....	10 "
Do.....helpers	8	1	18 00	1 00	10 "
Weighers cast steel	8	....	16 00	....	12 "
Foremen cast steel melting	6	....	48 50	....	12 "
Helpers, "	24	....	60 00	....	12 "
Converters	2	....	4 00	....	12 "
Do....helpers	6	....	9 00	....	12 "
Inspectors cast steel	2	....	6 00	....	12 "
Do........helpers	2	....	3 00	....	12 "
Shearmen	3	....	8 00	....	12 "
Do....helpers	12	8	21 00	11 00	12 "
Rollers	5	....	44 00	....	12 "
Do...helpers	27	5	68 00	6 25	12 "
Heaters	6	....	30 00	....	12 "
Do...helpers	5	2	13 00	1 00	12 "
Blacksmiths	2	....	4 65	......	12 "
Do......helper	1	....	1 75	......	12 "
Engineers	2	....	6 00	......	12 "
Firemen	2	....	4 50	......	12 "
Machinist	1	....	2 50	......	12 "
Carpenter	1	....	2 25	......	12 "
Millwrights	2	....	4 50	......	12 "
Watchmen	4	....	6 25	......	12 "
Weighers	2	1	3 50	83	12 "
Laborers	50	....	74 00	....	12 "

ANDERSON & WOODS.

MANUFACTURES—ROLLING MILLS.

ALLEGHENY COUNTY.

J. PAINTER & SONS, PITTSBURGH, PA.

Hoop and band iron.

Quantity in tons and value in dollars of annual product: 18,000 tons; $1,500,000.

Whole number of persons employed: 760.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during yelr...	Remarks.
Manager	1	....	....	....	About 288 days.	
Foremen	3	....	$3 00	....		
Heaters	28	....	$5 00 to 8 00	....		Piece wk. wages avg'd
Do....helpers	28	....	1 50	....		....do........do.
Puddlers	104	....	3 15	....		....do........do.
Do....helpers	104	....	1 85	....		....do........do.
Rollers	14	....	8 00 to 10 00	....		....do........do.
Do..helpers	13	....	5 00	....		
Stockers	6	....	1 75	....		
* Buggymen	....	....	....	....		
Engineers	9	....	1 75 to 6 00	....		
Firemen	16	....	1 50	....		
Blacksmiths	3	....	3 00	....		
Do....... helpers,	3	....	1 80	....		
Machinists	3	....	2 00 to 3 50	....		
Carpenters	2	....	2 50	....		
Hookers	4	....	1 75	....		
Catchers & roughers,	52	135	2 75	80c to $1 60		
Weighmen	4	....	1 87½	....		
Common laborers	206	....	1 12½	....		
Roll turners	6	....	2 75	....		
Drivers	16	....	1 50	....		

* Each puddler buggies for himself.

Characteristics of Establishment.—The Pittsburgh Iron works were built in 1833; they contain 52 single puddling and fourteen heating furnaces; six 8 inch, three ten inch, one 12 inch, one 16 inch and two 20 inch trains of rolls, with capacity to produce 25,000 tons per annum. The main mill buildings are iron. Tenements for all workmen are owned by the firm.

Exclusive products are hoop iron for barrels, tubs, pails, trunks and cotton ties, band iron for cooperage, strap and butt hinges, stone saws and lock plate.

J. PAINTER & SONS.

PITTSBURGH FORGE AND IRON CO.

Pittsburgh, Pa.

Merchant iron, railroad splice bars, railroad car axles, railroad, steamboat and machine forgings.

Quantity in tons and value in dollars of annual product: 5,800 net tons; $290,000.

Whole number of persons employed: 150.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Foreman	1	....	$4 00	......	300 days.	As our rollers, heaters and puddlers work by the p'ce and pay their own help we have had to *estimate* the *daily* wages of them and their employees, this is as near as we can get at it and sufficient for practical purposes.
Heaters	3	....	5 00	......	200 “	
Do..helpers—pull ups	......	2	....	$ 50	200 “	
Puddlers	30	....	3 15	......	165 “	
Do....helpers	30	....	....	......	....	
Rollers	1	....	6 00	....	200 “	
	1	....	3 25			
	2	....	8 00			
Do..helpers—roughers	2	....	2 75	......	165 “	
Do..helpers	2	2	2 50	1 25	200 “	
Metal breakers	2	....	2 40	......	165 “	
Engineers	3	1	4 00	80	200 “	
			2 50			
			1 75			
Firemen	1	....	1 87½	....	200 “	
	1	....	1 75			
Blacksmiths	2	....	2 50	....	200 “	
			1 70			
Do......helpers	2	....	1 35	......	200 “	
Machinists	1	2	3 00	63	200 “	
	1		4 00		300 “	
Carpenter	1	....	2 25	......	300 “	
Hookers	1	....	1 90	......	200 “	
	2	....	1 85	......	165 “	
Catchers	2	....	6 00	......	200 “	
	1	....	1 85	......	165 “	
Weighmen	2	....	3 75	......	165 “	
Common laborers	14	....	1 25	......	200 “	
Ore grinder	1	....	1 75	......	165 “	
Hammermen	3	....	5 00	....	194 “	
			3 25			
			3 25			
Do......heaters	3	....	2 75	....	194 “	
			3 00			
			2 75			
Do......helpers	1	....	1 70	....	194 “	
	5	....	1 60			
Do......drivers	1	2	1 45	1 00	194 “	
Straighteners	2	2	1 90	90	200 “	
Drag outs	2	....	2 00	......	165 “	
Drag downs	2	....	1 90	......	200 “	
Shearmen	3	....	1 90	....	200 “	
			1 75			
			3 10			
Do....helpers	2	....	1 75	....	200 “	
			2 00			
Pilers and chargers	2	....	2 25	....	200 “	
			1 75			
Carters	2	....	1 50	......	200 “	
Cinder wheeler	1	....	4 00	......	165 “	
Ash wheeler	1	....	2 00	......	165 “	

JAS. H. MURDOCK, *Secretary.*

EVERSON, MACRUM & CO., PITTSBURGH, PA.

Sheet and bar iron.

Quantity in tons and value in dollars of annual product: $4,587\frac{1080}{2000}$ tons; say $350,000.

Whole number of persons employed: 167.

CLASSIFICATION.	No. of men.....	No of boys.....	Daily wages paid men...........	Daily wages paid boys..........	Time in operation during year...
Manager	1	....	About $4 00	......	Partially (but not full at any time) throughout the whole year.
Heaters	7	....	" 6 25	......	
Puddlers	14	....	" 1 75	......	
Do...helpers	14	....	" 7 50	......	
Rollers	7	....	" 2 25	......	
Do..stokers	8	....	" 1 30	......	
Engineers	4	....	" 2 00	......	
Firemen	2	....	" 1 50	......	
Blacksmith	1	....	" 3 00	......	
Do.....helper	1	....	" 1 30	......	
Machinists	3	....	" 2 25	......	
Carpenter	1	....	" 1 50	......	
Hookers	2	....	" 1 40	......	
Catchers	7	....	" 2 25	......	
Weighmen	9	....	" 1 45	......	
Common laborers	6	....	" 1 20	......	
Boss puddler	1	....	" 1 60	......	
Boss laborer	1	....	" 1 55	......	
Matchers and doublers	8	....	" 1 35½	......	
Pair heaters	4	....	" 1 57	......	
Ore crusher	1	....	" 1 60	......	
Scraps, cinder, &c. boys	....	7	" 68	......	
Bricklayer and assistant	2	....	" 1 90	......	
Watchmen	4	....	" 1 43⅓	......	
Shearmen of sheet iron	3	....	" 4 66	......	
Pull-up, (boys)	....	3	....	40	
Errand boy	....	2	....	62½	
Scrappers	2	....	" 7 00	......	
Do....helpers	7	....	" 1 75	......	
Metal breaker	1	....	" 2 70	......	
Roll turner	1	....	" 2 90	......	
Chargers and pilers	3	....	" 1 45	......	
Bundlers, (of sheets)	2	....	" 1 45	......	
Dragdowns	2	....	" 1 50	......	
Shearmen, (muck iron)	4	....	" 1 45	......	
Do.....helpers	4	....	" 1 30	......	
Shearman, (of rods)	1	....	" 1 20	......	
Helpers of muck roller	8	....	" 1 80	......	
Do.....guide roller	6	....	" 1 45	......	
Clerks	5	....	....	......	

EVERSON, MACRUM & CO.

MOORHEAD & CO., PITTSBURGH, PA.

Galvanized and black sheet and plate iron.

Quantity in tons and value in dollars of annual product: 4,826 tons; $750,000.

Whole number of persons employed: 400.

Manager 1; foremen 5; heaters 22; heaters' helpers 8, and 6 boys; puddlers 22; puddlers' helpers 22; rollers 11; rollers' helpers 36, and 4 boys; stockers 19; buggymen 2; engineers 7; firemen 6; blacksmiths 2; blacksmiths' helpers 2; machinists 2; carpenter 1; hookers 6; catchers 14; weighmen 4, and 4 boys; common laborers, carters, &c., 80, and 11 boys; annealers 7, and 3 boys; knobblers 24; knobblers' helpers 24; galvanizing works 35; mason and helpers 4; watchmen 4; refiners 2. Common labor averages $1 25, and skilled labor $2 50 per day. Boys' wages average 75 cents per day. In operation during year, average 11 months.

MOORHEAD & CO.

CARNEGIE BROS. & CO., PITTSBURGH, PA.

Quantity in tons and value in dollars of annual product: 25,752,460 lbs.; $997,920 06.

Whole number of persons employed: 490.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Manager	1				Full time.	
Foreman	5		$3 50			
Heaters	12					Paid by the ton.
Do....helpers	12					do.
Puddlers	58					do.
Do....helpers	58		2 25			
Do....ash wheelers, etc.,	11		1 60			
Rollers	5					Paid by the ton.
Do....helpers	10					do.
Stockers	6					do.
Buggymen	5					do.
Engineers	5		$2 50 to 2 25			
Firemen	6		1 55			
Blacksmiths	5		2 25			
Do......helpers	5		1 35			
Machinists	5		2 25			
Carpenters	2		2 00			
Hookers	23					Paid by the ton.
Catchers	10					do.
Weighmen	4		1 50			
Common laborers, & others,	103		*1 25			
Charges, pilers, etc	32					Paid by the ton.
Drag downs	7					do.
Straighteners	18					do.
Boys, pull-ups, etc		20		50 to 90 c.		
Shearers	23		3 00 to 1 50			
Roll turners, bricklayers, &c.	28		5 00 to 2 25			
Gas producers	11					Paid by the ton.

* Common laborers.

CARNAGIE BROS. & CO.

SHOENBERGER & CO., PITTSBURGH, PA.

Nails, horse shoes and sheet iron.

Quantity in measure and value in dollars of annual product: 180,000 kegs nails at $3 00, $540,000; 40,000 kegs horse shoes at $4 25, $170,000; 1,200 tons sheet iron at $80 00, $96,000.

Whole number of persons employed: about 360.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Manager	1		$6 00			This is a careful estimate when the mill is running pretty full (not to our full capacity.) It would be impossible to give the exact amount as puddlers are paid by the ton, nailers by the keg, &c. Only about half the men are paid out of the office, as the puddlers pay their helpers, the nailers their feeders, the rollers their catchers, &c. During the year 1875 the mill only ran about 8 months, the puddlers being on a strike for nearly three months in the beginning of the year.
Foremen	2		2 35			
Heaters	12		5 00			
Pull up boys		12		$0 37½		
Puddlers	58		3 25			
Do....helpers	58		1 55			
Rollers	5		6 00			
Do....helpers	10		2 75			
Stockers	4		1 60			
Buggymen	4		1 42			
Engineers	3		2 02½			
Firemen	4		1 80			
Blacksmiths	4		2 50			
Do....helpers	2		1 50			
Machinists	4		2 60			
Carpenter	1		2 40			
Hookers	8		1 37½			
Catchers	9		2 75			
Weighmen	4		1 50			
Common laborers	10		1 25			
Nailers	27		4 00			
Shearmen	8		2 00			
Horse shoe shop boys		13		1 00		
Nail feeders (mostly boys)		90		1 75		
Roll turner	1		4 00			
Nail tenders	5		2 00			

Characteristics of Establishment.—Established in 1824; located on the Allegheny river, in the business portion of the town, occupying about six acres of ground. Nails are our specialty. Have at present 91 nail machines, the largest nail factory in this section of the country. 2 mills with 29 puddling furnaces and 9 heating furnaces, 2 muck trains, 1 sheet train, 1 bar train, 1 8 in. guide train and 1 nail plate train, and 1 horse shoe factory with 4 machines, 3 steam cammers, and 11 punching machines.

SHOENBERGER & CO.

Leishman.

WILSON, WALKER & CO., PITTSBURGH, PA.

Bar and bridge plate iron.

Quantity in tons and value in dollars of annual product: 5,000 tons; $315,000.

Whole number of persons employed: 102.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	Remarks.
Manager	1	....	$5 00	......	12 mos	
Foreman	1	....	3 00	......	12 “	
Heaters	4	....	....	......	9 “	Paid by ton, avg. wages $4 ꝑ day.
Do.. helpers	2	....	.....	......	9 “	
Puddlers	15	....	....	......	5 “	Paid by ton, average $5 25 ꝑ ton.
Do....helpers	15	....	....	......	5 “	Paid by puddler, piece work, average $4 ꝑ day.
Rollers	4	....	4 00	......	9 “	
Do..helpers	4	....	2 25	......	9 “	
Stokers	1	....	....	......	5 “	Piece work, average $2 25 ꝑ day.
Buggymen	4	....	1 50	......	9 “	
Engineer	1	....	4 00	......	12 “	
Firemen	2	....	1 75	......	12 “	
Blacksmith	1	....	2 75	......	10 “	
Do......helper	1	....	1 75	......	10 “	
Machinists	2	....	2 25	......	12 “	
Carpenter	1	....	2 25	......	11 “	
Hookers	2	....	1 25	......	9 “	
Catchers	4	....	2 50	......	9 “	Piece work, average $2 50 ꝑ day.
Weighmen	1	....	2 00	......	12 “	
Common laborers	35	4	1 25	50c	....	
Bricklayer	1	...	3 00	......	12 “	

Remarks.—2,200 tons of mill product was sold to our forge, thereby giving appearance of $150,000 more sales than actually made.

WILSON, WALKER & CO.

LINDSAY & M'CUTCHEM, PITTSBURGH, PA.

Manufacturer hoop and band iron.

Value in dollars of annual product: $450,000.

Whole number of persons employed: 228 men and boys.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Manager	1	....	$5 00	....	Full time.	
Foreman	1	....	3 00	....	Full "	
Heaters	10	....	....	....	$\frac{3}{4}$ "	75 cents per ton.
Do...helpers	10	....	1 75	....	$\frac{3}{4}$ "	$5 per ton average.
Puddlers	36	....	....	....	$\frac{3}{4}$ "	Pudl'r pays helper.
Do...helpers	36	....	....	....	$\frac{3}{4}$ "	$5 per ton average,
Rollers	10	....	....	....	$\frac{3}{4}$ "	and roller pays all
Do...helpers	16	42	....	Av. $1 50	$\frac{3}{4}$ "	his hands.
Stokers	2	....	2 25	....	$\frac{3}{4}$ "	
Buggymen	2	....	1 87	....	$\frac{3}{4}$ "	
Engineers	2	....	3 00	....	Full "	
Firemen	4	....	2 00	....	" "	
Blacksmith	1	....	3 50	....	" "	
Do...... helpers	1	....	1 75	....	" "	
Machinist or millwr't,	1	....	3 00	....	" "	
Carpenter	1	....	2 75	....	" "	
Weighman	4	....	1 75	....	$\frac{3}{4}$ "	
Common laborers	15	....	1 50	....	*..........	
Bricklayer and helper	2	....	3 50-1 75	....	Full time.	
Shearmen	6	....	1 80	....	$\frac{3}{4}$ "	
Bundlers	12	....	2 00	....	$\frac{3}{4}$ "	
Watchmen	3	....	1 70	....	Full "	
Coal shovelers	8	....	2 00	....	$\frac{3}{4}$ "	
Clerk	1	....	2 00	....	Full "	
Bookkeeper	1	....	3 50	....	" "	

* About one-half the number full time.

LINDSAY & M'CUTCHEM.

WM. CLARK & CO.

Manufacturers of hoop, band and scroll iron. Box 458, Pittsburgh, Pa.

Quantity in tons, and value in dollars of annual product: 6,000 tons; $435,000.

Whole number of persons employed: 200.

CLASSIFICATION.	No. of men......	Daily wages paid men	Time in operation during year....
Manager	1	......	
Foremen	2	......	
Heaters	6	$5 00	46 weeks.
Do...helpers	6	1 60	"
Puddlers	34	3 25	"
Do....helpers	34	1 75	"
Rollers	4	7 00	"
Do..helpers	50	1 50	"
Engineers	3	3 00	"
Firemen	4	1 50	"
Blacksmiths	2	3 50	"
Do......helpers	2	......	"
Carpenters	2	3 00	"
Weighman	1	1 25	"
Common laborers	25	1 25	
Roll turners	2	3 50	"
Bricklayer	1	4 00	12 months.
Shearman	6	1 50	"
Bundlers	15	1 30	

WM. CLARK & CO.

BLAIR COUNTY.

HOLLIDAYSBURG IRON AND NAIL CO.

Hollidaysburg, Pa.

Boiler, sheet, bar and angle iron, flat and small T rails, nails and spikes.

Quantity in tons and value in dollars of annual product: 2,967 tons (2,000 lbs.) iron and 15,296 kegs nails, value $185,246.

CLASSIFICATION.	No. of men.....	No. of boys.....	Average daily wages paid men,	Daily wages paid boys.........	Time in operation during year.
Manager	1	.....	$8 00	....	....
Foremen	2	.....	6 00	....	....
Heaters	6	.....	3 50	....	....
Do....helpers	6	.....	1 65	....	....
Puddlers	23	.....	3 21	....	....
Do....helpers	11	.....	1 61	....	....
Rollers	6	.....	3 50	....	....
Do....helpers	4	.....	1 75	....	....
Stokers	8	.....	1 50	....	....
Drag outs	7	4	1 35	$ 75	....
Engineers	6	.....	1 45	....	....
Firemen	2	.....	1 68	....	....
Blacksmiths	2	.....	2 12½	....	....
Do......helpers	2	.....	1 12½	....	....
Machinist	1	.....	4 60	....	....
Carpenter	1	.....	2 00	....	....
Hookers	3	5	1 15	1 00	....
Catchers	6	.....	2 00	....	....
Carters	2	.....	1 12½	....	....
Common laborers	22	.....	1 12½	....	....
Watchmen	2	.....	1 80	....	....
Nailers	4	.....	3 40	....	....
Nail feeders	.....	13	....	1 10	....
Clerks	3	.....	3 50	....	....

HOLLIDAYSBURG IRON AND NAIL CO.,
JOHNSTON.

ALTOONA IRON CO.

Makes bar, band and nut iron. Located at Altoona, Pa.

Quantity in tons and value in dollars of annual product: 2,289 tons, 8 cwt. 2 qrs. 19 lbs.; valued at $128,240.

Whole number of persons employed: 52.

Foreman, 1, $2 50 per day; heaters, 2, $6 00; helpers, 2, $1 80; puddlers, 8, $4 11; helpers, 8, $2 05; rollers, 3, $5 00; helpers, 2, $2 50; stokers, 4, $1 50; engineer, 1, $3 00; fireman, 1, $1 60; blacksmith, 1, $2 75; helper, 1, $1 50; hookers, 3, $1 10; catchers, 4, $2 00; weighman, 1, $2 00; common laborers, 6, $1 50; teamster, 1, $1 50; boys, 3, 50 cents. In operation two-thirds time.

A. H. VORIS, *Sec. and Treas.*

JOHN MUSSELMAN, DUNCANSVILLE, BLAIR CO., PA.

Nails.

Quantity in measure and value in dollars of annual product: 13,086 kegs, $39,258.

Whole number of persons employed: 79.

CLASSIFICATION.	No. of men...	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....
Manager	1		$3 00		Seven (7) months.
Foreman	1		2 00		
Heaters	2		4 00		
Do..helpers	1	1	1 75	$ 50	
Puddlers	6		3 00		
Do...helper	6		1 50		
Rollers	2		4 00		
Do...helpers	2		1 75		
Stoker	1		1 75		
Engineers	2		1 75		
Firemen	2		1 20		
Blacksmith	1		2 75		
Do.....helper		1		90	
Machinist	1		1 75		
Carpenter	1		1 75		
Hookers		2		75	
Catchers	2		1 75		
Weighman	1		1 25		
Common laborers	12		1 10		
Nailors	7		3 00		
Do..feeders	5	15	1 50	1 25	
Nail packers		2		1 75	
Do..bluer	1		1 10		
Watchman	1		1 50		

JOHN MUSSELMAN.

BERKS COUNTY.

WM. M'ILVAIN & SONS, READING, PA.

Manufacture boiler plate, tank chute, stack, pipe and boat iron.

Quantity in pounds and value in dollars of annual product: 4,707,258 pounds=$2,353\frac{1258}{2000}$ net tons; value $143,316 06.

Whole number of persons employed: 77.

CLASSIFICATION.	No. of men......	Daily wages paid men	Time in operation during year....	Remarks.
Manager	1	$2 00	Full time	The mill men work by the ton, and make about 2¾ tons per day, making an average of the price carried out as daily wages. Wages having been changed during the year, the average is here given.
Foremen	2	3 40	Mill run 194 days.	
Heaters	4	3 40		
Do. .helpers	4	1 45		
Puddlers	8	2 85		
Do. . . .helpers	8	1 40		
Rollers	4	1 95		
Catchers	4	1 35		
Straighteners	4	1 35		
Levermen	4	1 35		
Pilers	4	1 35		
Engineers	4	1 45		
Blacksmiths	1	1 87		
Do.......helpers	1	1 22½		
Marking off iron	2	1 35		
Carpenter	1	1 50		
Puddling mill, Roller	1	1 50		
Puddling mill, Catchers,	2	1 22½		
Weighmen	1	1 37½		
Common laborers	10	1 22½		
Bricklayer	1	1 28½		
Teamsters	3	1 22½		
Shingling pud. balls	2	1 35		
Book-keeper	1	2 28½		

E. & G. BROOKE, BIRDSBORO', PA.

Manufacturers of puddle bars and Anchor brand cut nails.

Quantity and value in dollars of annual product:

98,642 kegs of nails, at $2 98	$293,953 16
*971 tons puddle bars, at $42 71	41,490 63
	335,443 79

Whole number of persons employed: 111.

CLASSIFICATION.	No. of men	Daily wages paid men	Time in operation during year
Manager	1	$5 00	218 days.
Heaters	5	2 86	
Do...helpers	5	1 56	
Puddlers	27	2 80	
Do....helpers	27	1 60	
Rollers	4	3 14	
Do..helpers	1	1 96	
Stokers	2	1 79	
Engineers	2	1 72	
Blacksmiths	2	1 36	
Do.....helpers	2	1 07	
Machinists	3	1 55	
Carpenter	1	1 75	
Hookers	4	1 51	
Catchers	4	2 46	
Weighmen	2	2 16	
Common laborers	13	1 00	
Carters	5	2 50	
Bricklayer	1	2 80	

*Gross tons of 2,240 lbs.

E. & G. BROOKE,
Per George W. Harrison.

E. & G. BROOKE.

Birdsboro', Berks county, Pa.

Hands employed in nail factory, 132 ; outside men, 12.

Product, 98,642 kegs nails=$293,953 16.

CLASSIFICATION.	No. of men.....	No. of boys.	Daily wages paid men...........	Daily wages paid boys..........	Time in operation during year....
Superintendent	1		$4 87		163 dys
Slitters	3		2 50		
Helpers	4		1 10		
Heaters	2		2 14		
Tenders	2		1 05		
Nailers	26		3 80		
Feeders	66		1 10		
Packers	3		3 00		
Helpers	3	2	1 50	$ 50	
Pilers	2		2 45		
Coopers	10		1 75		
Machinists	4		1 68		
Superintendent of machinery	1		5 00		
Blacksmith	1		1 80		
Helpers	2		1 00		
Laborers	2		1 00		
*Outside men.**					
Superintendent	1		2 10		
Laborers	10		1 00		
Carpenter	1		1 75		

* Employed in repairing about furnaces, rolling mill, dwelling houses, &c.

J. H. STERNBERGH, READING, PA.

Merchant, bar, bolt, nut and rivet iron.

Quantity in tons and value in dollars of annual product: $1,208 tons, $2,240.

Whole number of persons employed : about 23 in this department.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid	Daily wages paid per ton........	REMARKS.
Heaters	2			$ 62	All paid by the ton, and not by the day.
Do...helpers	2			31	
Roller	1			70	
Do..helpers	3			40	At work every day in the year except Sundays, holidays, and say three days in January and three in July, while boilers are being cleaned.
Stocker	1		$1 25		
Buggyman	1		1 25		
Engineer	1		1 80		
Fireman	1		1 25		
Blacksmith	1		1 85		
Do.....helper	1		80		
Hookers		2		15	
Catchers		2		22	
Weighman	1		1 25		
Common laborers	2		1 25		
Straighteners		2		15	

Characteristics of Establishment.—A rolling mill under the same roof with my bolt and nut works.

I consume all the iron I make within about 2 or 3 per cent. in the manufacture of nuts, bolts, screws, &c., therefore I cannot give the value of it. Very little was sold in the shape of bar iron.

J. H. STERNBERGH.

JAMES HENDERSON,

Hamburg, Berks county, Pa.

Quantity in tons and value in dollars of annual product: 600 tons; value $60,000.

Whole number of persons employed: 50.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Manager	1		$100 per mon.		About one-fourth.
Heaters	2		3 00 to 4 00		
Do....helpers	3		1 50 to 1 75		
Puddlers	6		2 75 to 3 00		
Do....helpers	6		1 37 to 1 50		
Rollers	2		4 50 & 1 75		
Do....helpers	3		2 25		
Stockers	2		1 25		
Buggymen			1 25		
Engineer	1		1 50		
Fireman	1		1 25		
Blacksmith	1		3 00		
Do....helper	1		1 25		
Machinist	1		1 50		
Hookers	2	2		$0 75	
Catchers	2	2		0 75	
Weighman	1		2 00		
Common laborers	6		1 25		
Miscellaneous	2	3		0 75	

Characteristics of Establishment.—These works are making only very high class iron, hence the smallness of production. A great deal of the iron is worked 3 times more than ordinary iron. They began on a new patent process called Henderson's Patent Process after the proprietor of the works, who is the inventor. The dull times and the difficulty of introducing a new article has restricted the product. The works began last September to make iron. The product of the works can be increased to about 4,000 tons of highest and next grade. The highest class ranks equal to Lowmoor, Sligo and Taylors; the next grade is superior to charcoal rolled puddled iron. Bar iron only made. Only ordinary anthracite pig used.

JAMES HENDERSON.

JOSEPH L. BAILEY & CO.

Pine Iron Works P. O., Berks county, Pa.

Boiler iron and muck bars.

Quantity in weight and value in dollars of annual product: 4,719,976 lbs. boiler iron, value $201,322 96; 1,812 tons muck bars, value $72,480.

Whole number of persons employed: 40 in Plate mill, 24 in Puddle mill.

CLASSIFICATION.	No. of men......	Daily wages paid men..........	Time in operation during year....
Foremen	2	$5 00	Two-thirds.
Heaters	4	3 50	
Do...helpers	4	2 25	
Puddlers	8	2 80	
Do....helpers	8	1 80	
Rollers	5	3 00	
Do..helper	1	2 00	
Stocker	1	2 00	
Blacksmiths	2	2 00	
Do......helpers	2	1 65	
Hooker	1	....	
Catchers	5	2 25	
Weighmen	2	1 65	
Common laborers	6	1 65	
Squeezer man	1	4 20	
Straighteners	4	2 25	
Levermen	4	2 25	
Pilers	4	2 25	

Make a specialty of extra quality of flange and solid fire box iron for locomotive and marine work.

Sold the Glasgow Iron Works to the Glasgow Iron Company.

JOSEPH L. BAILEY & CO.

PHILADELPHIA & READING R. R. CO.'S ROLLING MILL.

Reading, Berks county, Pa.

Manufacture iron and steel rails and splice bars.

Quantity in tons and value in dollars of annual product: year 1875, 11,785 tons, (2,240 lbs.), value, $625,000.

Whole number of persons employed: 300.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operat. on during year
Manager	1	......	$10 00	......	8 mos.
Foremen	1	......	5 00	......	......
Heaters	18	......	3 50	......	......
Do....helpers	20	......	1 80	......	......
Puddlers	24	......	2 40	......	......
Do....helpers	24	......	1 60	......	......
Rollers	5	......	4 00	......	......
Stockers	2	......	1 60	......	......
Buggymen	3	......	3 00	......	......
Engineers	8	......	2 00	......	......
Blacksmiths	3	......	2 00	......	......
Do....helpers,	3	......	1 50	......	......
Machinists	4	......	2 50	......	......
Carpenter	1	......	2 00	......	......
Hookers	14	......	2 10	......	......
Catchers	6	......	2 40	......	......
Weighmen	4	......	2 00	......	......
Common laborers	18	......	1 25	......	......
Roll turner	1	......	3 60	......	......
Chargers	6	......	1 75	......	......
Pull outs	8	......	1 80	......	......
Clerks	6	......	2 25	......	......
Miscellaneous	110	10	1 60	$ 75	......

Characteristics of Establishment.—A rolling mill with twelve single puddling furnaces, eight heating and two re-heating furnaces, three trains of three high 23″ rolls, and a rotary squeezer, one train of 12″ rolls, three 40″x40″ upright engines, one horizontal engine 24″x20″, one horizontal engine, 12″x20″, three steam shears, &c., &c.

Manufacture iron and steel rails and splice plates. Generally engaged re-rolling rails for the Philadelphia and Reading R. R. Co.

Capacity, 22,000 gross tons annually.

Very respectfully.

W. E. C. COXE, *Supt. R. M.*

CAMBRIA COUNTY.

CAMBRIA IRON COMPANY.

Iron and steel rails.

Quantity in tons and value in dollars of annual product: Iron and steel rails, 89,166 tons; $4,484,240.

Whole number of persons employed: 1,027.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Manager	1		$10 00		12 months.
Foremen	12		$1 25 to 4 00		
Heaters	54		3 00		
Do. helpers	54		1 60		
Puddlers	96		2 60		
Do. helpers	96		1 30		
Rollers	4		3 00 to 4 00		
Do. helpers	38		1 50 to 1 25		
Stokers	20		98		
Buggymen	58		1 50		
Engineers	16		1 55 to 3 00		
Firemen	8		1 40		
Hookers	38		1 75		
Catchers	16		1 75		
Weighmen	4		2 00		
Common laborers	50		1 00		
Cold and hot straighteners	20		2 00 to 2 25		
Gaggers	8		2 00		
Ashmen and cindermen	65		1 00		
Pilers	32		1 50		
Drillers and punchers	12		1 25		
Other day hands	250	75	90 to 1 25	$0 60 to $0 80	

PERSONS EMPLOYED IN SHOPS.

CLASSIFICATION.	No. of men.	Daily wages paid men.	No. of boys.	Daily wages paid boys.	Time in operation during year.
Machine shop	100	$0 90 to $5 25	10	$0 60 to $0 80	12 months.
Carpenter shop	35	90 to 3 75	5	60 to 80	....
Smith shop	45	1 20 to 4 25	5	60 to 80	....
Paint shop	10	1 43 to 2 50	.....	....	....
Saddler shop	3	1 25 to 2 00	.....	....	....
Wagon shop	16	1 20 to 2 00	.....	....	....
Car shop	7	1 00 to 1 50	.....	....	....
Boiler shop	17	1 00 to 3 00	.....	....	....
Pattern shop	15	1 25 to 5 00	4	50 to 75	....
Foundry	60	1 25 to 5 00	10	60 to 80	....
Brick and stone masons	65	1 25 to 5 00	.....	....	....
Other laborers	75	1 00 to 2 00	.....	....	....
Teamsters	100	1 00 to 1 25	.....	....	....
STEEL WORKS.					
Converting department	225	$1 20 to $4 00	15	$0 60 to $0 85	....
Blooming mill	80	1 00 to 3 00	.....	....	....

CAMRRIA IRON CO.,
Per Geo. A. Bates.

CENTRE COUNTY.

CONSTANS CURTIN & CO., ROLAND P. O., CENTRE CO., PA.

Bar iron of all kinds, and also boiler covers.

Quantity in tons and value in dollars of annual product: about 1,100 tons, 2,000 pounds each, rating at an average of $90, would make $22,000 over and above the forge accounts, which would be 77,000.

Whole number of persons employed: 11.

Foreman or master roller 1, 60 cents per ton, 2,240 single milled, $1 20 per ton doubled milled; heaters 1, 60 cents per ton, 2,240 short milled; helper 1, $1 20 per ton, 2,240; puddlers 2, $4 per ton, 2,240; roller 1, 80 cents per ton, of 2,240 single milled, $1 60 per ton double milled; hooker, boy, 1, $20 per month; catchers 1, 50 cents per ton, of 2,240 short milled, $1 per ton, of 2,240 double milled; catcher, 1; weighmen, 2; common laborer, 1. In operation during year, 10 months.

Same manager for furnace, forge and rolling mill, Austin Curtin.

We do not run puddling furnace only about 3 months in a year, and then only for our country custom business.

Furnace helper stocks.

Master roller blacksmiths for mill.

The weighman straighten and carry out the iron.

Characteristics of Establishment.—Eagle rolling mill was built about 55 years ago by Roland Curtin, for the manufacture of all kinds and sizes of cold blast charcoal bar iron. One train of rolls, one blasting furnace and one puddling furnace. The puddling furnace was built about 25 years ago, but do not make a great deal of puddled iron only for special purpose, such as axle iron. Do a considerable business in wire rods, sheet iron bar and boiler covers out of the charcoal iron. The mill is 1¼ miles south-west of the forge and furnace, and on the same stream. The iron after it is rolled and ready for market, is hauled down to the forge and furnace, and shipped from station (Curtin station) on Bald Eagle Valley railroad.

First means to get iron to the market from this country was on pack mules to Pittsburgh, then on wagons, then by arks twice a year when the water would rise, then by canal, and since 1865 by railroad to any part of the country.

C. CURTIN & CO.

CHESTER COUNTY.

THORNDALE IRON WORKS.

Wm. L. Bailey & Co., Chester county, Pa. Boiler, plate and tank iron.

Quantity in tons and value in dollars of annual product: 2,191 tons of 2,000 lbs,; value $155,693 81.

Whole number of persons employed: average about 66 men and 2 boys.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....
Manager	1	2	$5 00	$0 80	241 for part of the mill where iron is finished, and 226 days for puddlers.
Foremen	2	......	4 25	......	
Heaters	4	......	3 00	......	
Do....helpers	4	......	1 60	......	
Puddlers	8	......	3 00	......	
Do....helpers	4	......	1 50	......	
Rollers	4	......	2 00	......	
Stocker	1	......	1 60	......	
Engineers	2	......	2 50	......	
Blacksmith	1	......	1 80	......	
Do....helper	1	......	1 40	......	
Hookers	2	......	1 40	......	
Catchers	2	......	1 55	......	
Common laborers	3	....	1 25 1 40	....	
In various positions not designated above, averaging about	27	......	1 55	......	

Characteristics of Establishment.—Our mill is situated on the Penn'a R. R., 35 miles west of Philadelphia, and has been in operation most of the time since 1847. Manufacture boiler and plate iron for various purposes for which such iron is used. One train of rolls for plates, and one train of rolls for muck bars which are used to make plate iron. 2 heating furnaces and 2 single and 1 double puddling furnaces.

WM. L. BAILEY & CO.

COLUMBIA COUNTY.

BERWICK ROLLING MILL CO.

Berwick, Columbia county, Pa.

Bar iron and axles.

Quantity in weight and value in dollars of annual product: 1,713,149 ℔s.; $42,828 73.

Whole number of persons employed: 56.

Managers, 2; superintendent, 1, $2,000 per year; heaters, 2, 70 cents per ton; helpers, 2, 40 cents per ton; puddlers, 10, $2 76⅔ per ton; helpers, 10, $1 38⅓ per ton; rollers, 2, 70 cents per ton; helpers, 2, 40 cents per ton; stockers, 3, 30 cents per ton: engineers, 2, $1 75 per day; firemen, 2, $1 50 per day; blacksmith, 1, $2 25 per day; helper, 1, $1 12½ per day; machinist, 1, $2 50 per day; hookers, 3, 75 cents per ton; catchers, 3, 40 cents per ton; common laborers, (include boys) 9, $1 12½ per day; boys, 3, 75 cents per day. In operation eight months, May and December inclusive.

Characteristics of Establishment.—This mill was built during the year 1872. The first iron was made in November of same year. It was run under its original management until October, 1873, and was then closed down. It remained closed until May, 1875, when, under the supervision of W. B. Miles, (C. G. Jackson and C. R. Woodin being general business managers) it was re-opened. Since May, 1875, until the present time (September, 1876) it has been running without intermission, except when closed down. probably for a week or two, to make necessary repairs.

BERWICK ROLLING MILL CO.,
JNO. M. MOOREHEAD.

DAUPHIN COUNTY.

PENNSYLVANIA STEEL CO.

Steel works P. O., Dauphin co.

Quantity in tons and value in dollars of annual product: 48,660 tons; value, $3,162,900.

Whole number of persons employed: 1,656.

Converting department, 285 men, $1 50 per day; 5 boys, 50 cents; mill department, 390 men, $1 75; 18 boys, 60; steam machinery, 75 men, $1 60; machine shop and foundry, 230 men, $1 60; 3 boys, 60 cents; carpenters, 70 men, $1 50; laborers, 580 men, $1 00.

Characteristics of Establishment—These works produce Bessamer steel; use principally by themselves in the manufacture of railroad bars; also makes steel by the Martin process, in open hearth furnaces. The product of these is prepared for merchant mill to work into boiler plate and all the varieties of merchant steel.

L. S. BENT, *Supt.*

LANCASTER COUNTY.

SUSQUEHANNA IRON CO.

Columbia, Lancaster co., Pa.

Quantity in tons and value in dollars of annual product: 5,000 tons merchant bar iron, at $50 per ton, $250,000.

Whole number of persons employed: 150 men and boys.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...
Manager	1	....	$6 00	......	240 days.
Foremen	2	....	5 25	......	
Heaters	3	....	5 00	......	
Do...helpers	3	....	2 50	......	
Puddlers	22	....	2 67	......	
Do.....helpers	22	....	1 33	......	
Rollers	4	....	5 50	......	
Do...helpers	8	....	2 00	......	
Stockers	5	....	1 10	......	
Buggyman	1	....	1 35	......	
Engineers	2	....	1 65	......	
Firemen	2	....	99	......	
Blacksmiths	2	....	1 80	......	
Machinists	2	....	1 85	......	
Carpenter	1	....	1 25	.....	
Hookers	4	....	80	......	
Catchers	5	....	1 80	......	
Weighmen	3	....	1 50	......	
Common laborers	40	10	90	50	
Dragging down	6	6	90	45	
Bookkeeper	1	....	2 75	......	

Characteristics of Establishment.—This company has a capacity of manufacturing 8,000 tons of merchant bar iron per year.

We consumed during the year ending December 31, 1875, 5,800 tons pig iron and 10,000 tons bituminous coal and 1,000 tons Lake Champlain ore.

WM. PATTON.

SAFE HARBOR IRON WORKS, *August* 11, 1876.

W. HAYES GRIER, Esq.,
Bureau of Industrial Statistics, Harrisburg, Pa.:

DEAR SIR:—There has not been any manufacturing done at these works, of any kind, during the past ten years, or in other words, these works have been standing idle since the spring of 1865.

Respectfully,
SAM. M. WRIGHT, *Manager.*

LYCOMING COUNTY.

VALENTINE IRON CO.

Williamsport, Lycoming co., Pa.

Charcoal iron.

Quantity in tons and value in dollars of annual product: 1,500 tons, valued at $157,500.

Whole number of persons employed: averaging 60.

Managers, 3; foreman, 1; heater, 1, 80 cents per ton; helper, 1, 45 per ton; forgeman, 16, $3 25 per ton; hammerman, 1, 80 per ton; roller, 1 90 per ton; helpers, 2, 50 per ton; stockers, 2, 30 per ton; buggyman, $1 25 per day; engineers, 2, $2 75 per day; fireman, 1, $1 50 per day; blacksmith, 1, helper, 1, both $75 per month; carpenter, 1, $2 per day; hooker, 1, 30 per ton; catchers, 2, 40 per ton; weighman, 1, $1 50 per day; common laborers, 5, $1 25 per day; watchman, 1, $1 50 per day; bundler and straightener, 3, 30 per ton; saw mill hands employed to saw cord for charcoal purposes, 13, averaging $1 50 per day; foreman, 1, about $2 50 per day. In operation all the year around except Sundays.

All our hands, with the exception of the laborers, work by the ton.

Characteristics of Establishment.—Our works consist of a forge, rolling mills and a saw mill, with four charcoal kilns.

The forge contains 8 double tuyere forge fire, 1 steam hammer and engine for blowing cylinders to supply blast. In the same we convert cold blast charcoal pig metal into blooms, using charcoal for fuel. The charcoal we burn ourselves from wood sawed in our saw mill out of refuse stuff coming down the river.

In the rolling mill we convert the blooms into all sizes of bar iron, principally into wire rods, bolt rods, scythe iron and iron for shovels, hoes and other articles requiring the very finest brand of iron. The puddling department remains unfinished, trade not warranting its completion.

VALENTINE IRON CO.
CHAS. E. ANDERSON.

LEHIGH COUNTY.

CATASAUQUA MANUFACTURING COMPANY.

Catasauqua, Lehigh county, Pa. Bar iron and plate iron.

Quantity in tons and value in dollars of annual product: 6,000 tons; value, $465,600.

Whole number of persons employed: 350.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....
Manager	1	.....	$2,500 00	.....	Mills in operation about half time.
Foremen	2	.....	2,000 00 1,200 00	.....	
Heaters	20	.....	4 00	.....	
Do....helpers	20	.....	2 00	.....	
Puddlers	60	.....	3 00	.....	
Do....helpers	60	.....	1 75	.....	
Rollers	6	.....	5 00	.....	
Do....helpers	6	.....	2 00	.....	
Stockers	8	.....	1 70	.....	
Buggymen	4	.....	1 60	.....	
Engineers	10	.....	2 00	.....	
Blacksmiths	4	.....	2 25	.....	
Do....helpers	4	.....	1 50	.....	
Machinists	5	.....	2 00	.....	
Carpenters	3	.....	2 00	.....	
Hookers	18	.....	1 10	.....	
Catchers	12	.....	1 75	.....	
Weighmen	10	.....	1 70	.....	
Common laborers	25	.....	1 10	.....	
Straighteners—boys	2	4	1 80	$0 80	
Drag outs	8	16	1 60	1 00	
Bank men	4	8	1 60	1 00	
Coal wheelers	10	.....	1 60	.....	
Draymen	8	.....	1 60	.....	
Shippers	4	.....	1 60	.....	
Clerks	7	.....	1 75	.....	

CATASAUQUA MANUFACTURING CO.

By Oliver Williams.

MIFFLIN COUNTY.

LOGAN IRON AND STEEL CO.

Lewistown, Mifflin county, Pa.

Manufacturers of bar iron.

Quantity in tons and value in dollars of annual product: 1,186 tons, $79,254 80.

Whole number of persons employed: 36.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....
Manager	1	....	$4 33	......	12 months.
Heater	1	....	2 52	......	10 "
Do..helper	1	....	1 35	......	10 "
Puddlers	3	....	3 00	......	5 "
Do..helpers	3	....	1 50	......	5 "
Roller	1	....	3 80	......	10 "
Do..helpers	2	....	2 00	......	10 "
Stockers	2	....	1 25	......	10 "
Engineer	1	....	1 50	......	10 "
Blacksmiths	5	....	1 80	......	10 "
Do....helpers	5	....	1 05	......	10 "
Hookers	....	2	......	70	10 "
Catcher	1	....	1 22	......	10 "
Common laborers	5	1	1 16	50	10 "
Straighteners	....	2	......	63	10 "

Characteristics of Establishment.—This company manufactures merchant bar iron, made from both anthracite and cold blast charcoal pig iron, also railroad couplings, links and pins.

R. H. LEE, *Supt.*

MERCER COUNTY.

WESTERMAN IRON CO.

Sharon, Mercer county, Pa. Manufacturers of sheet, hoop and bar iron, nails, railroad and boat spikes and small T rails.

Quantity in tons of annual product: 12,159$\frac{1019}{2000}$ tons.

Whole number of persons employed: 567.

CLASSIFICATION.	No. of men......	Daily wages paid men..........	REMARKS.
Manager	1	$3 39	
Foremen	2	3 03	
Heaters	9	5 00	
Do....helpers	9	1 80	
Puddlers	88	3 60	
Do....helpers	58	1 90	
Rollers	9	19 55	Plate, sheet and bar mill pay roughers. Guide, hasp and muck mill pay all hands.
Do....helper	1	....	
Stockers	9	1 60	
Buggymen	2	1 30	
Engineers	3	2 33	
Fireman	1	2 00	
Blacksmith	1	12 50	Paying all hands.
Machinists	5	2 10	
Carpenters	4	2 37½	
Hookers	2	1 20	
Catchers, bar and plate mill	2	6 70	Paying helpers.
Weighmen	8	1 80	
Common laborers	16 34	1 50 1 25	
Watchmen	6	2 25	
Shearers	7	1 70	
Drag outs	8	1 65	
Brick layer	1	10 00	Paying all hands with horse and cart.
Ash men	2	2 50	
Nailers	14	7 60	Paying feeders.
Boys	22	0 60	

WESTERMAN IRON CO.,
Per D. Adams.

MONTGOMERY COUNTY.

ALAN WOOD & CO.

Conshohocken, Montgomery county, Pa.

Sheet and plate iron.

Quantity in tons and value in dollars of annual product: 6,049 tons, value about $450,000.

Whole number of persons employed : 385.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Foremen	9	....	$4 00	....	1 mill 9 months, 1 mill 1 month.	Wages are nearly all paid by the ton, and amount to an average daily rate about as given.
Heaters	24	....	3 50	....		
Do...helpers	20	....	2 25	....		
Puddlers	44	....	3 00	....		
Do...helpers	44	....	2 00	....		
Rollers	26	....	3 50	....		
Stockers	19	....	1 50 to 2 00	....		
Buggymen	6	....	1 40 to 1 50	....		
Engineers	15	....	2 00 to 3 50	....		
Blacksmiths	3	....	2 00 to 3 00	....		
Do.....helpers	3	....	1 50	....		
Machinists	4	....	2 50 to 3 50	$1 25		
Carpenters	2	....	2 00 to 4 00	....		
Hookers	14	....	2 00	1 25		
Catchers	14	....	1 50 to 2 50	....		
Weighmen	9	....	1 50 to 2 00	....		
Common laborers	20	....	1 40	....		
Sheet roll hands	30	....	2 00 to 4 00	....		
Flue roll hands	31	8	2 00 to 4 00	60 to 75		
Extra men	40	....	2 00 to 4 00	....		

Characteristics of Establishment.—The full capacity of the works is about 15,000 tons of sheet and plate iron per annum, and will employ a total of about 500 hands when in full operation. The small production for the year 1875 was owing to the depressed condition of business.

ALAN WOOD & CO.

NORRISTOWN IRON WORKS.

Norristown, Montgomery county, Pa. Skelp iron.

Quantity in tons and value in dollars of annual product: 1,165 tons of 2,000 lbs.; value, $69,822 70.

Whole number of persons employed: 81.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys....	Time in operation during year...	REMARKS.
Foreman	1		$4 00		23	Run only single time.
*Heaters	4		3 65		w'ks.	
Do....helpers	4		1 83			
*Boilers	12		2 84			
*Boiler helpers	12		1 65			
*Rollers, finishers	2		4 26			
*Do....helpers	2		2 50			
*Stockers	2		1 90			
Buggyman	1		1 25			
Engineers	2		2 25			
Blacksmith	1		2 50			
Do....helper	1		1 25			
Machinist	1	1	2 25	$0 75		
Carpenter	1		2 50			
*Hookers		6		1 11		
*Catchers	3		2 00			
Weighman	1		2 00			
Common laborers	9		1 25			
Roll turner	1		3 00			
*Shinglers	2		3 75			
*Wheelers	2		1 47			
*Straighteners		6	1 54			
*Puddle rollers	2		2 50			
*Do....catchers	2		2 00			

*Paid by the ton but have averaged and put them by the day.

Characteristics of Establishment.—One 18 inch finishing train of rolls, two high. One 10 inch finishing train of rolls, two high. One 18 inch puddle train of rolls, two high. Have six double puddling furnaces; three heating furnaces; eight 54 inch dia. by 18 feet 6 inch double flue boilers; one steam hammer. Have been using semi-bituminous coal. Have been making a specialty of skelp and band iron but can make bars or plates. Annual production when running full, about 5,000 tons of 2,240 lbs.

JAMES HOOVEN & SONS.

POTTSTOWN IRON CO., POTTSTOWN, PA.

Plate iron and puddled bars.

Quantity in tons: 4,809$\frac{1536}{2240}$ puddled bars, 5,781$\frac{1845}{2000}$ plate iron.

Whole number of persons employed : 124.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....
Manager	1	....	$7 10	......	12 months.
Foreman	1	....	6 04	......	12 "
Heaters	6	....	5 06	......	12 "
Do. helpers	6	....	2 24	......	12 "
Foreman	1	....	4 58	......	12 "
Puddlers	20	....	2 95	......	12 "
Do. . helpers	20	....	1 75	......	12 "
Rollers	2	....	1 40	......	12 "
Catcher	2	....	1 72	......	12 "
Hook-up	....	2	......	$ 90	12 "
Dragout	....	4	......	1 20	12 "
Shingling	4	....	2 54	......	12 "
Stokers and cindermen	4	....	1 70	......	12 "
Bar cutter	1	....	4 56	......	12 "
Hammermen	2	....	1 35	......	12 "
Door boys	....	4	......	90	12 "
Rollers	4	....	3 06	......	12 "
Pilers	6	....	2 16	......	12 "
Rollmen	6	....	2 50	......	12 "
Trimmer	1	....	5 30	......	12 "
Carrier in	1	....	3 26	......	12 "
Layers out	2	....	2 58	......	12 "
Men at shears	10	....	1 53	......	12 "
Engineers	2	....	2 48	......	12 "
Cindermen	2	....	1 80	......	12 "
Laborers	10	....	1 26	......	12 "

WILLIAM H. MORRIS, *Treasurer.*

POTTS BROTHERS, POTTS' GROVE IRON WORKS.

Pottstown P. O., Pa.

Plate iron, puddled bars.

Quantity in tons and value in dollars of annual product: 1,107 tons, plates, $96,500 ; 429 tons, pud. bars, $16,300. Total, $112,800.

Manager, $114 ; foreman, 1 ; heaters, 2 ; helpers, 2 ; puddlers, 4 ; helpers, 4 ; pud. bar roller, 1 ; plate rollers, 2 ; squeezer man, 1 ; buggymen, 2 ; engineer, 1 ; watchman, 1 ; blacksmith, 1 ; straightener and luma, 4 ; hooker, 1 ; catcher, 1 ; catchers at plate rolls, 2 ; common laborers, 3. Total, 33. In operation during the year, 105 days.

Characteristics of Establishment.—The manufacturing of plate iron includes the following : boiler iron, tank iron, pipe iron, ship plate, flue iron, shute iron.

MONTOUR COUNTY.

WATERMAN & BEAVER.

Danville, Montour county, Pa.

Iron rails.

Quantity in tons and value in dollars of annual product: 10,388 gross tons, value, $436,296.

Whole number of persons employed: 403.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Foremen	9		$2 95		Six months.
Heaters	22		2 46		
Do. helpers	26		1 20		
Puddlers	34		2 37		
Do. helpers	34		1 24		
Rollers	12		1 83		
	11		2 66		
Rollers' helpers	3		1 73		
Stockers	34		1 14		
Buggymen	8	6	1 13	$ 44	
Engineers	5		1 39		
Firemen and waterman	10		1 00		
Blacksmiths	5		1 48		
Do. helpers	6		1 15		
Machinists and moulders	9		1 70		
Carpenters	6		1 78		
Hookers	6		1 44		
Catchers		17		64	
Weighmen	3		1 73		
Common laborers	52	37	95	44	
Rail finishers	20		1 55		
Boiler makers	2		1 98		
Watchmen	5		1 03		
Masons	3		2 26		
Teamsters and cart drivers	18		1 15		

WATERMAN & BEAVER.

THE CO-OPERATIVE IRON AND STEEL WORKS,

Danville, Pa. Manufacture railroad iron.

Quantity in tons and value in dollars of annual product: about 4,000 tons; $180,000.

Whole number of persons employed: about 125.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation year
Manager	1				About 7 months.
Foreman	1				
Heaters	9		$3 00 to 4 00		
Do....helpers	5		1 50 to 2 00		
Puddlers	16		2 25		
Do....helpers	16		1 25		
Rollers	3		4 00 to 5 00		
Stockers	5		1 50		
Buggyman	1	2	1 50	$0 65	
Engineers	3		1 55		
Firemen	2		1 00		
Blacksmith	1		1 55		
Do....helper	1		1 00		
Carpenter	1		1 50		
Hookers	4	2	1 50	1 00	
Catchers	3	1	1 75	1 25	
Weighman	1		2 00		
Common laborers	2		1 00		
Saw men	2	1	1 15	0 80	
Hob straighteners	2		1 60		
Cold......do	1		Contract.		
Do......do....help	2		1 25		
Punchers	4	2	1 40	1 15	
Other hands	30	9	1 00 to 2 00	0 35 to 0 80	

Characteristics of Establishment.—The Co-operative Iron and Steel Co.'s rail mill contains 4 heating furnaces, one 18 inch rail train with extra rolls for the manufacture of all shapes and sizes of rails, one 18 inch train for re-rolling iron for rail manufacture, one 250-horse power engine for motive power for rail and re-rolling train of rolls, one No. 1 Sturtevant fan for heating furnaces, one set of saws, one straightening press, two punches, one 50-horse power engine for motive power for saws, punches and press. The mill is fully equipped with all machinery, &c., necessary to run a first class rail mill. The mill has been in operation about 20 months. Average daily capacity 30 (thirty) tons of rails, iron or steel headed.

The puddle mill contains 8 puddling furnaces, with a capacity of 20 tons of puddled iron every 24 hours, one 150-horse power engine for furnishing power for an 18 inch train of muck rolls, one 30-horse power engine for driving a No. 2 Sturtevant fan, feed pumps, &c. There is also a blacksmith shop and a nest of 4 firing boilers under the same roof.

The company own their own railroad siding, wharfs, &c.

L. K. RISHEL, *Treas.*
Per CHAS. H. TWIST.

MONTGOMERY COUNTY.

POTTSTOWN IRON CO., POTTSTOWN, PA.

Puddled bars and nails.

Quantity in tons: puddled bars, $6,293\frac{520}{2240}$ tons; $5,610\frac{1200}{2000}$ tons, or nails, 112,212 kegs.

Whole number of persons employed: 194.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men............	Daily wages paid boys...........	Time in operation during year...
Heaters	4	....	$3 50	....	12 months.
Do...helpers	4	....	1 78	....	12 “
Puddlers	32	....	2 95	....	12 “
Do.....helpers	32	....	1 75	....	12 “
Rollers	2	....	3 25	....	12 “
Catchers	2	....	2 30	....	12 “
Hook-up	2	....	1 36	....	12 “
Dragout	2	....	1 62	....	12 “
Squeezerman	2	....	1 62	....	12 ‘
Coal stocker	2	....	2 18	....	12 “
Water tender	2	....	1 68	....	12 “
Engineers	2	....	2 25	....	12 “
Machinists	5	....	2 25	....	12 “
Carpenters	2	....	1 80	....	12 “
Blacksmiths	4	....	2 25	....	12 “
Do....helpers	4	....	1 50	....	12 “
Nailors	15	....	4 80	....	12 “
Do...feeders	....	53	....	$1 22	12 “
Coopers	11	....	2 00	......	12 “
Men at sheet rolls	10	2	1 70	90	12 “

WILLIAM H. MORRISON, *Treasurer.*

NORTHAMPTON COUNTY.

THE BETHLEHEM IRON COMPANY,

Bethlehem, Northampton county, Pa. Manufacture pig iron, iron railroad bars, and steel railroad bars.

Quantity in tons and value in dollars of annual product: 41,484 tons pig iron and speigel eisen, 14,185 tons iron rails, etc., 22,197 tons steel rails, etc.; value, $2,000,000.

Whole number of persons employed: 2,143.

The following classification includes blanks No. 2 B, No. 3 B, No. 3 D, No. 3 K.

The Bethlehem Iron Company, under one management, operates and owns 5 blast furnaces for making pig iron, 1 blast furnace for making spiegel eisen; leases 1 blast furnace for making pig iron; 1 rolling mill for iron rails and shapes, 1 rolling mill for steel rails and shapes, 1 machine and blacksmith shop, 1 foundry.

CLASSIFICATION.	No.	Daily wages.	FURNACE HANDS.	No.	Daily wages.
Foremen	19	$1 75 to 10 10	Foundrymen	1	$5 00
Heaters	26	3 60 to 3 87	Keepers	12	1 66
Do....helpers	32	1 44 to 1 53	Do....helpers	22	1 48 to 1 54
Puddlers	54	2 86 to 3 41	Fillers	46	1 48
Do....helpers	54	1 35 to 1 65	Cindermen	20	1 48
Iron rail mill hands	51	1 02 to 4 67	Engineers	6	1 50
Iron top and bottom hands,	27	1 26 to 3 76	Firemen	6	1 16
Steel rail mill hands	96	1 05 to 5 47	Blacksmith	1	1 60
Steel converting dep. hands,	148	1 19 to 5 58	Do....helper	1	1 31
Steel blooming dep. hands,	42	1 09 to 3 34	Weighmen	10	1 48 to 1 54
Steel mill, others than above	96	1 09 to 2 90	Coal screeners	10	1 29
Blacksmiths and helpers	26	0 95 to 2 77	Stock breakers	14	1 16
Machinists	36	*0 50 to 1 00	Engine boys	2	0 50
		†1 00 to 2 60	Laborers	20	0 50 to 1 10
Carpen'rs & pattern-makers,	21	1 50 to 2 52			
Boys iron and steel mill	48	0 34 to 1 00	Aggregate	171	
Common laborers	749	*0 31 to 0 85			
		†0 85 to 1 15			
Foundry hands	58	*0 68 to 0 90			
		†1 09 to 2 26			
Puddling and mch't mill hands	56	0 64 to 2 80			
Aggregate	1,639				

*Boys. †Men.

Our mines are all worked by contract. 307 men and 31 boys are employed. Average daily wages of men 75 cents to $1 25; average daily wages of boys 50 to 75 cents.

THE BETHLEHEM IRON CO.,
By ABRAHAM S. SCHROPP, *Sec'y.*

S. OLIVER & SON, EASTON, NORTHAMPTON CO., PA.

Manufacture sheet iron.

Quantity in tons and value in dollars of annual product: $851\frac{679}{1000}$ tons sheet iron, $85,000.

Whole number of persons employed: 37.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys...........	Time in operation during year....
Manager	1	....	Work by the ton.	....	Ten months.
Foreman	1	....		....	
Heater	1	....		....	
Do..helper	1	....		....	
Puddlers	4	....		....	
Do....do	4	....		....	
Roller, bar	1	....		....	
Engineers	2	....	......	....	
Blacksmith	1	....	$2 50	....	
Do......helper	....	1	......	$0 68	
Annealers	2	....	......	....	
Trimmer	1	....	......	....	
Hooker	1	....	......	....	
Catcher, bar	1	....	......	....	
Dragout, bar	1	....	......	....	
Common laborers	2	4	1 75	$ 68 to $1 25	
Sheet rollers	2	....	......	....	
Furnace men	2	....	......	....	
Spanner men	2	....	......	....	
Catchers, sheet	2	....	......	....	

Characteristics of Establishment.—Name of firm changed on the 1st January, 1876, by the death of Samuel Oliver, when Dennis Reilly became owner of S. Oliver's three-fourth interest in the works. Our men are paid weekly.

Mill called "Easton Sheet Iron Works." Name of firm, Oliver & Co. Postoffice address, Easton, Pa. Members of firm, Dennis Reilly and Theo. Oliver.

Very near all work by the ton, viz: Sheet rollers, $2 55 and 3 25; furnace men, 1 80 and 2 40; spanner men, 1 80 and 2 40; catchers, 1 50 and 1 95; trimmer, 70 cents; annealers, 1 25; bar heaters, 60; bar roller, 45; bar catcher, 30; bar dragout, 30; bar hook-up, 27; helper, 30; puddlers, boilers, 4 50.

OLIVER & CO.

PERRY COUNTY.

DUNCANNON IRON CO.,

Duncannon, Perry county, Pa. Bar iron and nails.

Quantity in tons and value in dollars of annual product: 5,199 tons; value, $338,000.

Whole number of men employed: 225.

CLASSIFICATION.	No. of men......	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....
Manager	1	......	......	......	Ten months.
Foremen	2	......	$4 00	......	
Heaters	6	......	3 00	......	
Do....helpers	6	......	1 35	......	
Puddlers	24	......	2 75	......	
Do....helpers	24	......	1 40	......	
Rollers	5	......	3 00	......	
Do....helpers	17	......	1 50	......	
Nailers	25	......	3 50	......	
Feeders	10	35	1 05	$1 05	
Stockers	12	......	1 25	......	
Buggymen	2	......	1 25	......	
Engineers	4	......	2 25	......	
Firemen	2	......	1 50	......	
Blacksmiths	4	......	1 75	......	
Do....helpers	3	......	1 25	......	
Machinist	1	......	2 25	......	
Carpenters	2	......	1 75	......	
Hookers	......	9	......	1 00	
Weighmen	6	......	1 40	......	
Common laborers and carters	25	......	1 05	......	

DUNCANNON IRON CO.
J. JOHN WISTER, *Treasurer.*

PHILADELPHIA.

WM. L. HARVEY ROWLAND, FRANKFORD, PHILA.

Make springs, steel and re-roll Norway iron.

Value in dollars of annual product: $446,530 09 sold in 1875.

Whole number of persons employed: January 1, 1876, 134 hands.

Our workmen are principally men with a few of their sons under 21 years old.

Total of wages we paid 1875, $102,917 47.

Characteristics of Establishment.—James Rowland & Co.'s Kensington Iron and Steel Works, 920 North Delaware avenue, Philadelphia; built in 1845; manufacturers of merchant bar, band and skelp iron and steel plow and shovel plate; have 11 double puddling furnaces, 8 heating furnaces and 7 trains of rolls. Annual capacity, 11,000 tons.

WM. L. HARVEY ROWLAND.

KENSINGTON IRON AND STEEL WORKS.

James Rowland & Co., 920 North Delaware Avenue, Phil'a. Manufacturers of merchant bar, band and skelp iron, and shovel and agricultural steel.

Quantity in tons and value in dollars of annual product: iron, agricultural and shovel steel made and sold in 1875, 6,673 tons; value, $485,939.

Whole number of persons employed: during the year 1875 we employed about 235 persons.

OCCUPATION AND CLASSIFICATION.	No. men	No. of youth	Daily wages paid men	Daily wages paid youth	Time in operation during year
Rollers	7	....	$3 58 to 3 70	....	Our mill has been employed during every month in the year, but not up to its full capacity, as the above figures will show, our annual capacity being 11,000 tons.
Do	4	....	2 14	....	
Roughers	12	....	1 74	....	
Catchers	11	....	1 28 to 2 00	....	
Straighteners	....	23	....	70c to 90c	
Stockers	7	....	1 36	....	
Squeezers	2	....	1 64	....	
Buggyman	1	....	1 36	....	
Drag outs	4	....	1 55	....	
Hook ups	....	8	....	70c to 90c	
Heaters	8	....	2 97	....	
Do....helpers	7	....	1 50	....	
Machinists	2	....	4 00	....	
Puddle bosses	2	....	4 25	....	
Labor boss	1	....	2 50	....	
Stable boss	1	....	2 50	....	
Engineers	5	....	3 00	....	
Watermen	2	....	2 50	....	
Blacksmiths and helpers	6	....	1 40 to 2 98	....	
Carpenter	1	....	2 50	....	
Watchmen	4	....	11 20 to 15 00 p.w.	....	
Laborers	29	....	1 50 to 1 40	....	
Mason	1	....	3 50	....	
Drivers	16	....	1 50 to 2 00	....	
Puddlers	32	....	*5 50 to 4 75 p. t.	....	
Helpers	32	....	0 47 to 0 38 "	....	
Sheet roller	1	....	4 00	....	
Heater	1	....	4 00	....	
Laborers	5	....	1 40 to 2 30	....	

*The helpers' wages, 47 cents to 38 cents, is paid by puddlers and is included in the $5 50 to 4 75.

JAS. ROWLAND & CO.

SCHUYLKILL COUNTY.

SCHUYLKILL IRON COMPANY, later MILL CREEK IRON COMPANY.

Quantity in tons and value in dollars of annual product: 1,490 tons muck bar, valued at 64,000 dollars; 3,894 tons pig iron, valued at 86,576 dollars.

Whole number of persons employed: 161.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men. Average during year	Time in operation during year	REMARKS.
Manager	1	....	$4 00	From Jan. 1 to April 18, 1875, and from Sept. 27 to Dec. 31, 1875, the furnace only.	
Foremen	2	....	3 00		
Squeezers	4	....	3 00		Jan. 1 to April 18.
Do....helpers	2	....	2 25		do.
Puddlers	44	....	3 00		do.
Do....helpers	44	....	1 60		do.
Rollers	2	....	5 00		do.
Buggymen, draggers	....	4	75		do.
Engineers	4	....	1 75		do.
Blacksmiths	2	....	1 75		do.
Carpenters	1	....	2 00		do.
Hookers	....	2	78		do.
Catchers	2	....	1 24		do.
Weighmen	2	....	1 50		do.
Common laborers	23	3	1 24		Jan. 1 to April 18, and Sept. 27, 1875, to Dec. 31, 1875.
As furnace keepers	2	....	1 72		Jan. 1 to April 18, and Sept. 27 to Dec. 31.
helpers	3	....	1 41½		do.
fillers	6	....	1 30⅔		do.
hoisters	2	....	1 35¾		do.
cinder men	4	....	1 33		do.
Drivers and carters	2	....	1 25		do.

Characteristics of Establishment.—Schuylkill iron company's product from January 1 to April 18, 1875, 2,179.10 tons; Mill Creek iron company's, Sept. 27, 1875, to Dec. 31, 1875, 1,714.10 tons; total production of pig iron in 1875, 3,894 tons.

The Schuylkill iron company went out of existence on April 19, 1875, when the Mill Creek iron company was organized a few months after, and after re-lining the furnace commenced working on September 27, 1875.

The puddle mill, as also the merchant mill, were not run during the year 1875 by the Mill Creek iron company, but the Schuylkill iron company produced from January 1 to April 18, 1875, 1,490 tons muck bar.

The machine shop laid idle.

JNO. A. SCHWEERS,
Secretary Mill Creek Iron Company.

ATKINS BROS., POTTSVILLE, SCHUYLKILL CO., PA.

T and street railroad iron and wrought iron girders.

Quantity in tons and value in dollars of annual product: 11,735¼ tons T and street rails, 2,240 pounds per ton, at $50, $588,750.

Whole number of persons employed: 450.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....
Heaters	16	....	$3 00	....	Rail mill 222 days, puddle mill full time.
Do...helpers	16	....	1 50	....	
Puddlers	90	....	1 87 to 2 50	....	
Do..do	61	....	1 25	....	
Rollers	4	....	2 43 to 4 00	....	
Do..helpers	6	....	1 62 to 3 25	....	
Buggymen	10	....	1 58 to 2 10	....	
Engineers	8	....	1 17 to 1 80	....	
Firemen	4	....	1 53	....	
Blacksmiths	5	....	1 50 to 1 75	....	
Do....helpers	5	....	1 17 to 1 33	....	
Machinists	8	....	1 50 to 1 80	....	
Carpenters and pattern-makers	4	....	1 33 to 1 83	....	
Hookers	8	4	2 00	$ 75	
Catchers	2	....	2 25 2 75	....	
Weighmen	2	....	1 20	....	
Common laborers	137	....	1 00 to 1 50	....	
Moulders	5	....	1 80 to 3 00	....	
Boiler-makes	2	....	2 08	....	
Roll turner	1	....	4 00	....	
....	....	48	....	50 to 1 00	
Bricklayers	4	....	1 35 to 2 00	....	

Characteristics of Establishments.—The Pottsville Rolling Mills have a capacity of 25,000 tons of finished iron, comprising T and street railroad iron of all sizes and rolled girders, but owing to dullness of the iron trade have not run more than half during the past year.

ATKINS BROS.,
Per Atkins.

JAMES A. INNESS, LITTLE SCHUYLKILL ROLLING MILL.

Bar iron.

Quantity in tons and value in dollars of annual product: capacity, 2,500 tons, at $50, $125,000. Have not been running a year.

Whole number of persons employed: 30.

CLASSIFICATION.	No. of men.....	No. boys........	Daily wages paid men	Daily wages paid boys..........	Time in operation during year ...	REMARKS.
Manager	1	....	$5 00	......	Average.	By the ton.
Foreman	1	....	2 00	......	"	"
Heaters	2	....	3 00	......	"	"
Do...helpers	2	....	1 50	......	"	"
Puddlers	2	....	2 63	......	"	"
Do...helpers	2	....	1 33	......	"	"
Rollers	2	....	3 00	......	"	"
Blacksmith	1	....	1 90	......	"	"
Do.....helper	....	1	....	$0 75	"	"
Hookers	....	2	....	50	"	"
Catchers	....	2	....	1 00	"	"
Weighman	....	1	....	1 40	"	"
Common laborers	....	4	....	1 10	"	"
Straighteners	...	3	....	75	"	"
Scrap packers	1	3	1 00	50	"	"

Characteristics of Establishment.—Rolling mill: 1 18 inch muck train, 1 16 inch bar train, 1 10 inch bar train, 3 puddling furnaces, 1 heating furnace. Run by water power entirely. Started in December, 1875.

JAMES A. INNESS.

Office of the Palo Alto Iron Works.
Benjamin Haywood, *Proprietor.*
Corner Second and Market Streets,
Pottsville, Pa., *June* 12*th*, 1876.

Dear Sir:—We are in receipt of your circular containing queries to be answered by manufacturers. In reply thereto, I would state that the Palo Alto rolling mills virtually stopped business in the fall of 1874, and since then have been doing very little, as the business had become so dull and unremunerative that I had to close up my works entirely, and now employ only a couple of watchmen to look after the works, and in all probability shall remain so for some time to come, and it is very probable that work in them will be abandoned entirely.

Yours truly,
BENJAMIN HAYWOOD, *Proprietor.*
Per J. D.

W. Hayes Grier, Esq., Harrisburg.

MANUFACTURES—ROLLING MILLS.

ROLLING MILLS.	Manager	Average daily wages	Foremen	Average daily wages	Heaters	Average daily wages	Heaters' helpers	Average daily wages	Puddlers	Average daily wages	Puddlers' helpers	Average daily wages
Allegheny county—												
Shoenberger & Co	1	$6 00	2	$2 35	12	$5 00	...	...	58	$3 25	58	$1 55
Carnegie Bros. & Co	1	...	5	3 50	12	p'd per ton.	12	p'd per ton.	58	p'd per ton.	58	2 25
Willson, Walker & Co.	1	5 00	1	3 00	4	4 00	2	p'd per ton.	15	5 25	15	p'd by pu.
Brown & Co	1	...	2	...	6	...	6	...	26	...	26	...
Wm. Clark & Co.	1	...	2	...	6	5 00	6	$1 60	34	3 25	34	1 75
Lindsay & M'Catchene	1	5 00	1	3 00	10	75c per ton.	10	1 75	36	5 00 pr ton.	36	p'd by pu.
Morehead & Co	1	...	5	...	22	...	14	...	22	...	22	...
Everson, Macrum & Co	1	...	...	...	7	4 00	...	...	14	6 25	14	1 75
Pittsburgh Forge and Iron Co.	...	...	1	4 00	3	5 00	2	0 50	30	3 15	30	...
J. Painter & Sons	1	...	3	3 00	28	5 00 to 8 00	28	1 50	104	3 15	104	1 85
Berks county—												
Philadelphia and Reading Railroad Rolling Mill	1	10 00	1	5 00	18	3 50	20	1 80	24	2 40	24	1 60
James Henderson	1	4 00	...	...	2	3 00 to 4 00	3	1 50 to 1 75	6	2 75 to 3 00	6	1 37to2 00
J. H. Sternbergh	...	...	...	...	2	p'd per ton.	2	p'd per ton.	...	...	...	...
Joseph L. Bailey & Co	...	...	2	5 00	4	3 50	4	2 25	8	2 80	8	1 80
Wm. M'Ilvaine & Sons	1	2 00	2	3 40	4	3 40	4	1 45	8	2 85	8	1 40
E. & G. Brooke	1	5 00	...	...	5	2 86	5	1 56	27	2 80	27	1 60
Blair county—												
Hollidaysburg Iron and Nail Co.	1	8 00	2	6 00	6	3 50	6	1 65	23	3 21	11	1 61
Altoona Iron Co.	...	...	1	2 50	2	6 50	2	1 80	8	4 11	8	2 05
Cambria county—												
Cambria Iron Co.	1	10 00	12	1 25to$4	54	3 00	54	1 60	96	2 60	96	1 30

MANUFACTURES—ROLLING MILLS—CONTINUED.

ROLLING MILLS.	Manager	Average daily wages	Foremen	Average daily wages	Heaters	Average daily wages	Heaters' helpers	Average daily wages	Puddlers	Average daily wages	Puddlers' helpers	Average daily wages
Centre county—												
C. Curtin & Co.			1		1		1		2	$4 per ton.		
Chester county—												
W. L. Bailey & Co.		$5 00	2	$4 25	4	$3 00	4	$1 60	8	$3 00	4	$1 50
Columbia county—												
Berwick Rolling Mill Co.	2		1	5 50	2	70c per ton.	2	40c per ton.	10	2 76 pr ton.	10	1 38 p ton.
Dauphin county—												
Pennsylvania Steel Co., for the year 1876												
Lancaster county—												
Susquehanna Iron Co.	1	6 00	2	5 25	3	5 00	3	2 50	22	2 67	22	1 33
Lehigh county—												
Catasauqua Manufacturing Co.	1	8 00	2	$3 to $4	20	4 00	20	2 00	60	3 00	60	1 75
Lycoming county—												
Valentine Iron Co	3		1		1	80c per ton.	1	45c per ton.	16	3 25 pr ton.		
Mercer county—												
Westerman Iron Co	1	3 39	2	3 03	9	5 00	9	1 80	58	3 60	58	1 90
Montgomery county—												
Alan, Wood & Co.			9	4 00	24	3 50	20	2 25	44	3 00	44	2 00

Norristown Iron Works	...	...	1	4 00	4	3 65	4	1 83	12	2 84	12	1 65
Pottstown Iron Co*	...	...	2	6 57	6	5 06	6	2 24	20	2 95	20	1 75
Potts Bros	...	...	...	...	...	...	...	...	...	...	...	...
Mifflin county—												
Logan Iron and Steel Co.	1	4 33	...	...	1	2 52	1	1 35	3	3 00	3	1 50
Montour county—												
Co-operative Iron and Steel Works	1	...	1	...	9	3 00 to 4 00	5	1 75	16	2 25	16	1 25
Waterman & Beaver	...	...	9	2 95	22	2 46	26	1 20	34	2 37	34	1 24
Northampton county—												
T. Oliver & Son†	...	...	...	...	...	...	...	...	...	...	...	...
Bethlehem Iron Co†	...	...	...	...	...	...	...	...	...	...	...	...
Schuylkill county—												
James A. Inness	1	5 00	1	2 00	2	3 00	2	1 50	2	2 66	2	1 33
Mill Creek Iron Co	1	4 00	2	3 00	4	3 00	2	0 25	44	3 00	44	1 60
Pottsville Rolling Mill	...	...	...	...	16	3 00	16	1 50	90	1 87 to 2 50	61	1 25

*Other persons which we cannot classify.

†See special report for classification of men and wages.

MANUFACTURES—ROLLING MILLS—CONTINUED.

ROLLING MILLS.	Rollers	Average daily wages,	Helpers	Average daily wages,	Stockers	Average daily wages,	Buggymen	Average daily wages,	Engineers	Average daily wages,	Firemen	Average daily wages,
Allegheny county—												
Shœnberger & Co	5	$6 00	10	$2 75	4	$1 60	4	$1 42	3	$2 02	4	$1 80
Carnegie Bros. & Co	16	1 60	10	Paid per ton.	6	Paid per ton.	5	Paid per ton.	5	2 50	6	1 75
Willson, Walker & Co	4	4 00	4	2 25	1	2 25	4	1 50	1	4 00	2	1 75
Brown & Co	4	....	3	....	3	....	....	....	2	....	2	....
Wm. Clark & Co	4	7 00	5	1 50	....	....	....	....	2	3 00	4	1 50
Lindsay & M'Catchene	10	5 00 per ton.	16	Paid by roller.	2	2 25	2	1 87	2	3 00	4	2 00
Moorhead & Co	11	....	40	....	19	....	2	....	7	....	6	....
Everson Macrum & Co	7	7 50	....	2 25	8	1 30	....	....	4	2 00	2	1 50
Pittsburg Forge and Iron Co	4	3 25 to 8 00	2	2 75	4	2 50	....	....	4	1 75 to 4 00	2	1 80
J. Painter & Sons	14	8 00 to 10 00	13	5 00	6	1 75	....	....	9	1 75 to 6 00	16	1 50
Berks county—												
Philadelphia and Reading Railroad Rolling Mill	5	4 00	....	....	2	1 60	3	3 00	8	2 00	....	....
James Henderson	2	4 50	3	3 25	2	1 25	1	1 25	1	1 50	1	1 25
J. H. Sternbergh	1	....	3	....	1	1 25	1	1 25	1	1 80	1	1 25
Joseph L. Bailey & Co	5	3 00	1	2 00	1	2 00	....	....	....	....	....	....
Wm. M'Ilvaine & Sons	4	1 95	....	....	....	....	....	....	4	1 45	....	....
E. & G. Brooke	4	3 14	1	1 96	2	1 79	....	....	2	1 72	....	....
Blair county—												
Hollidaysburg Iron and Nail Co	6	3 50	4	1 75	8	1 50	11	1 35	6	1 45	2	1 68
Altoona Iron Co	3	5 00	2	2 50	4	1 50	....	....	1	3 00	1	1 60
Cambria county—												
Cambria Iron Co	4	3 00 to 4 00	38	1 50 to 2 25	20	98	58	1 50	16	1 55 to 3 00	8	1 40
Centre county—												
C. Curtin & Co	1	80 c. per ton	....	....	....	....	....	....	....	....	....	....

Chester county—												
W. L. Bailey & Co.	4	2 00	...	...	1	1 60	...	...	2	1 50	...	...
Columbia county—												
Berwick Rolling Mill Co.	2	70 c. per ton	2	40 cts. per ton.	3	30 cts. per ton.	...	...	2	1 75	2	1 50
Dauphin county—												
Penn. Steel Co. for the year 1876	...	...	...	...	...	...	...	...	...	...	...	...
Lancaster county—												
Susquehanna Iron Co.	4	5 50	8	2 00	5	1 10	1	1 35	2	1 65	2	99
Lehigh county—												
Catasauqua Manufacturing Co.	6	5 00	6	2 00	8	1 70	4	1 60	10	2 00	...	...
Lycoming county—												
Valentine Iron Co	1	90 c. per ton	2	50 cts. per ton.	2	30 cts. per ton.	1	1 25	2	2 75	1	1 50
Mercer county—												
Westerman Iron Co	9	...	1	...	9	1 60	2	1 30	3	2 33	1	...
Montgomery county—												
Alan, Wood & Co.	26	3 50	...	...	19	1 75	6	1 45	15	2 75	...	...
Norristown Iron Works	2	4 26	2	2 50	2	1 90	1	1 25	2	2 25	...	...
Pottstown Iron Co.	2	2 40	...	...	...	...	...	...	...	...	...	...
Potts Bros.	...	...	...	...	...	...	...	...	...	...	...	...
Mifflin county—												
Logan Iron and Steel Co.	1	3 80	2	2 00	2	1 25	...	...	1	1 50	...	...
Montour county—												
Co-operative Iron and Steel Works	3	4 50	...	...	5	1 50	3	1 50	3	1 55	2	1 00
Waterman & Beaver	33	1 80 to 2 66	3	1 73	34	1 14	8	1 13	5	1 39	10	1 00
Northampton county—												
T. Oliver & Son	...	...	...	...	...	...	...	...	...	...	...	...
Bethlehem Iron Co	...	...	...	...	...	...	...	...	...	...	...	...
Schuylkill county—												
James A. Inness	2	3 00	...	...	...	...	...	...	...	...	...	...
Mill Creek Iron Co.	2	5 00	...	...	...	...	4	75	4	1 75	...	...
Pottsville Rolling Mill	4	2 43 to 4 00	6	1 62 to 3 25	...	...	10	1 58 to 2 10	8	1 17 to 1 80	4	1 53

MANUFACTURES—ROLLING MILLS—CONTINUED.

ROLLING MILLS.	Blacksmiths	Av'ge daily wages	Helpers	Av'ge daily wages	Machinists	Av'ge daily wages	Carpenters	Av'ge daily wages	Hookers	Av'ge daily wages	Catchers	Av'ge daily wages
Allegheny county—												
Shoenberger & Co	4	$2 50	2	$1 50	4	$2 60	1	$2 40	8	$1 37	9	$2 75
Carnegie Bros. & Co	5	2 25	5	1 35	5	2 25	2	2 00	23	Paid per ton.	10	Paid per ton.
Willson, Walker & Co	1	2 75	1	1 75	2	2 25	1	2 25	2	1 25	4	2 50
Brown & Co	2		2		2		1		3		4	
Wm. Clark & Co	2	3 50	2				2	3 00				
Lindsay & M'Catchene	1	3 50	1	1 75	1	3 00	1	2 75				
Moorhead & Co	2		2		2		1		6		14	
Everson, Macrum & Co	1	3 00	1	1 30	3	3 25	1	1 50	2	1 40	7	2 25
Pittsburgh Forge and Iron Co	2	1 73	2	1 35	4	63 to 4 00	1	2 25	3	1 90	3	1 85 to 6 00
J. Painter & Sons	3	3 00	3	1 80	3	2 00 to 3 50	2	2 50	4	1 75	187	80 to 2 75
Berks county—												
Phila. & Reading R. R. Rolling Mill,	3	2 00	3	1 50	4	2 50	1	2 00	14	2 10	6	2 40
James Henderson	1	3 00	1	1 25	1	1 50			4		4	
J. H. Sternbergh	1	1 85	1	80					2	Paid per ton.	2	Paid per ton.
Joseph L. Bailey & Co	2	2 00	2	1 65			1		1		5	2 25
Wm. M'Ilvaine & Sons	1	1 87	1	1 22			1	1 50	4	1 35	6	1 35
E. & G. Brooke	2	1 36	2	1 07	4	1 65	4	1 51	4	1 51	4	2 46
Blair county—												
Hollidaysburg Iron and Nail Co	2	2 12	2	1 12	1	1 60	1	2 00	8	1 15	6	2 00
Altoona Iron Co	1	2 75	1	1 50					3	1 10	4	2 00
Cambria county—												
Cambria Iron Co									38	1 75	16	1 75
Centre county—												
C. Curtin & Co									1	20 per month.		

Chester county—												
W. L. Bailey& Co	1	1 80	1	1 40	...	...	...	...	2	1 40	2	1 55
Columbia county—												
Berwick Rolling Mill Co	1	2 25	1	1 12	1	2 50	...	...	3	75 per ton.	3	40 per ton.
Dauphin county—												
Penn Steel Co. for the year 1876	...	...	...	...	...	...	...	...	...	...	...	...
Lancaster county—												
Susquehanna Iron Co	2	1 80	...	...	2	1 85	1	1 25	4	80	5	1 80
Lehigh county—												
Catasauqua Manufacturing Co	4	2 25	4	1 50	5	2 00	3	2 00	18	1 10	12	1 75
Lycoming county—												
Valentine Iron Co	2	3 00	...	...	...	...	1	2 00	1	30 per ton.	2	40 per ton.
Mercer county—												
Westerman Iron Co	...	...	...	...	5	2 10	4	2 37	2	1 20	2	...
Montgomery county—												
Alan, Wood & Co	3	2 50	3	1 50	4	3 00	2	3 00	14	2 00	14	2 00
Norristown Iron Works	1	2 50	1	1 25	1	2 25	1	2 50	6	1 11	3	2 00
Pottstown Iron Co*	...	...	...	...	...	...	...	...	...	...	...	...
Potts Bros	...	...	...	...	...	...	...	...	...	...	...	...
Mifflin county—												
Logan Iron and Steel Co	5	1 80	5	1 05	...	...	...	...	2	70	1	1 22
Montour county—												
Co-operative Iron and Steel Works,	1	1 55	1	1 00	...	...	1	1 50	6	1 25	4	1 50
Waterman & Beaver	5	1 48	6	1 15	9	1 70	6	1 78	6	1 44	17	64
Northampton county—												
T. Oliver & Son	...	...	...	...	...	...	...	...	...	...	...	...
Bethlehem Iron Co	...	...	...	...	...	...	...	...	...	...	...	...
Schuylkill county—												
James A. Inness	1	1 90	1	*75	...	...	...	...	2	*50	2	*1 00
Mill Creek Iron Co	2	1 75	...	...	...	...	1	2 00	2	*78	2	1 24
Pottsville Rolling Mill	5	1 50 to 1 75	5	1 17 to 1 33	8	1 50, 1 80	4	1 30, 1 80	8	2 00	2	2 25 to 2 75

* Other persons which we cannot classify

MANUFACTURES—ROLLING MILLS—CONTINUED.

ROLLING MILLS.	Weighmen	Average daily wages	No. of boys	Average daily wages	Common laborers	Average daily wages	Total No. of men	Total No. of boys	Time in operation during year—days
Allegheny county—									
Schoenberg & Co	4	$1 50	115	$ 37½ to $1 75	10	$1 25	245	115	270
Carnegie Bros. & Co	4	1 50	20	50 to 90	103	1 25	470	20	365
Willson, Walker & Co	1	2 00	4	50	35	1 35	102	4	270
Brown & Co	4	......	......	......	40	......	139	......	......
Wm. Clark & Co	1	1 25	......	......	25	1 25	200	......	322
Lindsay & M'Catchene	4	1 75	42	1 50	15	1 50	186	42	270
Moorehead and Co	8	......	28	......	91	......	372	28	335
Everson, M'Crum & Co	9	1 45	9	68 to 1 40	6	1 20	167	9	186
Pittsburg Forge and Iron Co	2	3 75	11	50 to 1 25	14	1 25	139	11	200
J. Painter & Sons	4	1 87	135	80 to 1 60	206	1 05	625	135	288
Berks county—									
Philadelphia and Reading R. R. Rolling Mill	4	2 00	10	75	18	1 25	290	10	240
James Henderson	1	2 00	7	75	6	1 25	43	7	90
J. H. Sternbergh	1	1 25	6	......	2	1 25	17	6	313
Joseph L. Bailey & Co	2	1 65	......	......	6	1 65	64	......	240
Wm. M'Ilvaine & Sons	1	1 37	......	......	10	1 22	77	......	194
E. & G. Brooke	2	2 16	......	......	13	1 00	111	......	218
Blair county—									
Hollidaysburg Iron and Nail Co	2	1 12	22	75 to 1 10	22	1 12	133	22	......
Altoona Iron Co	1	2 00	6	50 to 1 50	1	1 50	49	3	240
Cambria county—									
Cambria Iron Co	4	2 00	......	......	50	1 00	1,027	......	365

Centre county—									
C. Curtin & Co.	2	......	1	$20 per mo.	1	......	10	1	300
Chester county—									
W. L. Bailey & Co.	......	......	2	80	3	1 25	64	2	244
Columbia county—									
Berwick Rolling Mill Co.	......	......	3	75	9	1 12	56	3	240
Dauphin county—									
Pennsylvania Steel Co. for the year 1876	......	......	......	......	......	......	1,630	26	365
Lancaster county—									
Susquehanna Iron Co.	3	1 50	16	50	50	50 to 90	134	16	240
Lehigh county—									
Catasaqua Manufacturing Co.	10	1 70	28	90	25	1 10	322	28	180
Lycoming county—									
Valentine Iron Co.	1	1 50	......	......	5	1 25	60	......	313
Mercer county—									
Westerman Iron Co.	......	......	22	66	50	1 37	545	22	......
Montgomery county—									
Alan, Wood & Co.	9	1 75	8	70	20	1 40	377	8	270
Norristown Iron Works	1	2 00	13	75 to 1 11	9	1 25	70	13	161
Pottstown Iron Co.	......	......	......	......	......	......	114	10	365
Potts Bros.	......	......	......	......	......	......	33	......	105
Mifflin county—									
Logan Iron and Steel Co.	......	......	5	63 to 70	5	1 16	31	5	300
Montour county—									
Co-operative Iron and Steel Co.	1	2 00	17	65 to 1 25	2	1 00	113	17	210
Waterman and Beaver	3	1 73	54	54	52	95	343	60	183
Northampton county—									
T. Oliver & Son	......	......	......	......	......	......	......	......	......
Bethlehem Iron Co.	......	......	......	......	......	......	......	......	......
Schuylkill county—									
James A. Inness	1	*1 40	4	*1 10	3	*75	16	14	......
Mill Creek Iron Co.	2	1 50	9	75 to 1 24	23	1 24	152	9	180
Pottsville Rolling Mill	2	1 20	52	75 to 1 00	137	1 01 to 1 59	398	52	222

* Boy.

MANUFACTURES—ROLLING MILLS—CONTINUED.

ROLLING MILLS.	Production.	Tons.	Value.	Postoffice address.
Allegheny county—				
Shoenberger & Co	180,000 k'gs n'ls, 40,000 k'gs horse shoes, 1,200 t'ns sheet iron,	1,200	$806,000	Pittsburgh.
Carnegie Bros. & Co		12,876	997,920	"
Willson, Walker & Co.	Bar and bridge plate iron	7,800	478,500	"
Brown & Co	Iron and steel	10,500		"
Wm. Clark & Co	Wire, hoop and scroll iron	6,000	435,000	"
Lindsay & M'Catchene	Hoop and band iron		450,000	"
Moorhead & Co	Galvanized, black sheet and plate iron	4,826	750,000	"
Everson Macrum & Co	Sheet and bar iron	4,587	350,000	"
Pittsburgh Forge and Iron Co.	Merchant iron, railroad and steamboat iron, etc	5,800	290,000	"
J. Painter & Sons	Hoop and band iron	18,000	1,500,000	"
Berks county—				
Phil'a and Reading R. R. Roll. Mill,	Iron and steel rails, and spliced bars	11,785	625,000	Reading.
James Henderson	Pig iron	600	60,000	Hamburg.
J. H. Sternbergh	Merchant, bolt, bar and rivet	1,208		Reading.
Joseph L. Bailey & Co.	Boiler iron and muck bars		274,002	Pine Iron Works.
Wm. M'Ilvaine & Sons	Boiler plate, tank, shute, stack and boat iron	2,353	143,316	Reading.
E. & G. Brooke	Puddle bars and cut nails	971	41,490	Birdsboro'.
Blair couuty—				
Hollidaysburg Iron and Nail Co	Boiler, sheet, bar and angle iron, flat and T rails	2,967 15,296 kgs nls	185,246	Hollidaysburg.
Altoona Iron Co	Bar, band and nut iron	2,289	128,240	Altoona.
Cambria county—				
Cambria Iron Co	Iron and steel rails	89,166	4,484,240	Johnstown.
Centre county—				
C. Curtin & Co	Bar iron of all kinds, also boiler covers		77,000	Roland.
Chester county—				
W. L. Bailey & Co.	Boiler, plate and tank iron	2,191	155,693	Thorndale.
Columbia county—				
Berwick Rolling Mill Co	Bar iron and axles		42,828	Berwick.

MANUFACTURES—ROLLING MILLS—CONTINUED.

ROLLING MILLS	Production.	Tons.	Value.	Postoffice address.
Dauphin county—				
Penn'a Steel Co., for the year 1876	Bessemer steel	48,660	$3,162,900	Steel Works P. O.
Lancaster county—				
Susquehanna Iron Co.	Merchant bar iron	5,000	250,000	Columbia.
Lehigh county—				
Catasauqua Manufacturing Co	Bar and plate iron	6,000	465,000	Catasauqua.
Lycoming county—				
Valentine Iron Co	Charcoal iron	1,500	157,500	Williamsport.
Mercer county—				
Westerman Iron Co.	Sheet, hoop and bar iron, rails, etc	12,159	....	Sharon.
Montgomery county—				
Alan, Wood & Co.	Sheet and plate iron	6,049	450,000	Conshohocken.
Norristown Iron Works.	Skelp iron	1,165	69,822	Norristown.
Pottstown Iron Co	Plate iron puddle bars.	10,590	....	Pottstown.
Potts Bros	Plate iron and puddle bars	1,536	112,800	"
Mifflin county—				
Logan Iron and Steel Co	Merchant bar iron, railroad coupling links	1,186	79,254	Lewistown.
Montour county—				
Co-operative Iron and Steel Works.	Railroad iron	4,000	180,000	Danville.
Waterman & Beaver	Iron rails	10,388	436,296	"
Northampton county—				
T. Oliver & Son	Sheet iron	851	85,000	Easton.
Bethlehem Iron Co.	Pig iron, 41,484; iron rails, 14,185; steel rails, 22,197	77,866	2,000,000	Bethlehem.
Schuylkill county—				
James A. Inness.	Bar iron	2,500	125,000	Port Clinton.
Mill Creek Iron Co.	Muck bar and pig iron.	5,384	150,576	Pottsville.
Pottsville Rolling Mill	Make T railroad iron, wrought iron street girders.	11,785	588,750	"

MANUFACTURES—BLAST FURNACES.

ALLEGHENY COUNTY.

LUCY FURNACE CO., PITTSBURGH, PA.

Quantity in tons and value in dollars of annual product: 25,000 to 30,000 tons pig metal, value $625,000 to $700,000.

Whole number of persons employed: about 83 persons.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....
Manager	1	....	$4 00	......	......
Foundryman	1	....	2 50	......	......
Keepers	2	....	2 25	......	......
Do. .helpers	4	....	1 70	......	......
Top fillers	4	....	1 60	......	......
Cindertable men	4	....	1 40	......	......
Barrow men	16	....	1 50	......	......
Cindermen	2	....	1 40	......	......
Engineers	2	....	2 00	......	......
Firemen	2	....	1 50	......	......
Blacksmith	1	....	2 25	......	......
Do......helper	1	....	1 35	......	......
Carpenter	1	....	2 25	......	......
Helper	1	....	1 35	......	......
Laborers, about	30	....	1 35	......	......
Weighmen	2	....	1 50	......	......
Night foreman	1	....	2 50	......	......
Repairman and pipe fitter	1	....	1 65	......	......
Boys	...	3	......	$0 90	......
Metal carriers	6	....	1 70	......	......
Locomotive engineer	1	....	2 25	......	......

LUCY FURNACE CO.

Proprietors Carnegie Bros. & Co.

SHOENBERGER, BLAIR & CO., PITTSBURGH, PA.

Pig metal.

Quantity in tons and value in dollars of annual product: 13,495 at $23,-$310,385.

During 1875 the product was 13,495 tons, this arose from the fact that both furnaces were out of blast from five to six months during the year.

Running full, about 25,000 tons metal.

Whole number of persons employed: About 70.

CLASSIFICATION.	No. of men	Daily wages paid men until Nov. 26, 1875	Daily wages paid men after Nov. 26, 1875	REMARKS.
Foundrymen	1	*$1,300 00	....	During the year 1875 the furnaces were in blast only about one-half of the year. We usually run continuously through the year.
Keepers	4	2 25	$2 02½	
Helpers	4	1 75	1 57½	
Top fillers	4	1 85	1 66½	
Hot blast oven	2	1 60	1 44	
Stockers, bottom fillers	8	1 75	1 57½	
Cindermen	4	1 60	1 44	
Engineers	2	2 00	1 80	
Firemen	2	1 50	1 35	
Blacksmiths	2	1 80	1 62	
Carpenters	1	1 80	1 62	
Laborers, about	31	1 35	1 25	
Weighmen and iron breakers	4	2 00	2 00	
Yard boss	1	1 75	1 75	

* Per annum.

Characteristics of Establishment.—We have two furnace stacks, 62 feet in height each, one 13 feet in bosh, one 13 feet 8 inches in bosh.

When running regularly the production in metal is about 500 tons per week.

SHOENBERGER, BLAIR & CO.,
Per J. M. BROWNSON.

LAUGHLIN & CO.

Pittsburgh, Pa.

Pig iron.

Quantity in tons and value in dollars of annual product: 25,000 to 30,000 tons; present price per ton, $21.

Whole number of persons employed: 122.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys..........	Time in operation during year....
Manager	1				Work full time—365 days.
Foundryman	1				
Keepers	4		$2 25		
Do....helpers	4		1 80		
Fillers	29		1 60		
Guttermen					
Stockers					
Cindermen	5		1 60		
Engineers	5		2 25		
Firemen	2		1 60		
Blacksmiths	2		2 10		
Do....helpers	2		1 60		
Carpenters	2		2 05		
Laborers	57	6	1 18	$ 66	
Weighmen	2		1 60		

Characteristics of Establishment.—The establishment consists of two blast furnaces, one stack, 17 feet diameter, 60 feet high; one stack, 14 feet diameter, 62 feet high. The ore used is the Lake Superior specular. The fuel is coke from the Connellsville coal. The product is principally forge iron. The furnaces are located in the Fourteenth ward, Pittsburgh.

LAUGHLIN & CO.

BEDFORD COUNTY.

KEMBLE COAL & IRON CO., RIDDLESBURG, BEDFORD CO.

Quantity in tons: 9,744½.

Whole number of persons employed: 226.

CLASSIFICATION.	No. of men	Daily wages paid men.	Time in operat'n during year...
Manager	....	$4 00	Whole year.
Keepers	2	1 80	
Do....helpers	2	1 50	
Fillers	14	1 40	
Gutterman	2	1 20	
Stockers	4	1 00	
Cindermen	4	1 20	
Engineers	4	2 25	
Firemen	2	1 20	
Blacksmiths	2	1 75	
Carpenters	3	1 75	
Ore miners and laborers	70	1 50, average.	
Laborers, furnace	20	1 10	
Weighmen	2	1 50	
Coal miners and laborers	60	50 per ton—av. 3 to 4 tons per day.	
Cokers	20	90 per oven—2 per day, $1 80.	
Chargers and levelers	6	1 20	
Laborers, washing coal	5	1 20	
Mining superintendent	1	4 00	
Foremen	3	2 00	
General superintendent	1		
Clerks	2		

Characteristics of Establishment.—This company mine all their own ores, coal and limestone, also wash their coal after mining, and manufacture their own coke.

Their are two furnaces, (each 60 by 14,) but one only in blast during the year.

KEMBLE COAL AND IRON CO

LOWRY, EICHELBERGER & SONS.

Hopewell, Bedford county, Pa.

Manufacturers of charcoal pig iron.

Quantity in tons and value in dollars of annual product: 632 tons; estimated value, $30 per ton, or $18,960.

Whole number of persons employed: 57 of an average.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	Remarks.
Manager	1		$2 00		8 mos	
Foundryman	1		2 00		4½ "	
Keepers	2		1 20		" "	
Fillers	2		1 10		" "	
Gutterman	1		1 10		" "	
Stoker	1		1 10		" "	
Blacksmith	1		2 00		12 "	
Ore miners	17	4	$1 10 to 1 25	$0 50	7 "	About an average.
Laborers	5	1	1 10	50	6 "	About an average.
Wagoners	5		1 20		12 "	
Wood choppers	15		35 to 40c pr.cd		4 "	Averg'e about this number.
Colliers	6		$1 20		5 "	

LOWRY, EICHELBRGER & SONS.

BERKS COUNTY.

CLYMER IRON COMPANY.

Temple, Berks county, Pa.

Cold blast charcoal iron at Oley furnace.

Quantity in tons and value in dollars of annual product: 625 tons; $21,000.

Whole number of persons employed: 38.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Keepers	2		$1 25		6 mos.
Fillers	2		90		"
Gutterman	1		1 00		"
Stokers	2		80		"
Blacksmith	1		1 25		12 "
Carpenter	1		1 37		12 "
Ore miners	12	2	90	$0 70	5 "
Colliers	12		1 25		7 "
Teamsters	4		1 00		12 "

Characteristics of Establishment.—The firm of W. H. Clymer & Co., has been changed to Clymer Iron Company. Their works consist of two furnaces, one an anthracite, called Mt. Laurel, which is not quite finished; the other a charcoal furnace, called Oley, which run part of last year, and of whose working we have given you an account on the preceding page. It is of about the usual size, with a capacity of from eight hundred to one thousand tons a year. Oley is one of the oldest furnaces in the country; was built in the year 1772.

WM. H. CLYMER, *Proprietor.*

E. & G. BROOKE, BIRDSBORO', PA.,

Manufacturers of Keystone Anthracite pig iron.

Quantity in tons and value in dollars of annual product: No. 1 made 2,100 tons of 2,240 ℔s, at $21, $44,100; No. 2 made 2,378½ tons of 2,240 ℔s, at $21, $49,948 50; total, $94,048 50.

Whole number of persons employed: 108.

CLASSIFICATION.	No. of men	Daily wages paid men.........	Time in operation during year.	REMARKS.
Manager........	1	$3 00	Our No. 1 furnace in blast from Jan. 1, 1875, to May 22, 1875, about 4½ months. Our No. 2 furnace in blast from Oct. 16, 1875, to Jan. 1, 1876, about 2½ months.	We mine ourselves about one-half our consumption of ore, the other half we purchase.
Foundrymen....	1	2 50		
Keepers.........	2	1 80		
Do....helpers..	4	1 50		
Fillers...........	10	1 40		
Gutterman.......	2	1 20		
Stockers.........	4	1 00		
Cindermen......	3	1 20		
Engineers.......	2	2 40		
Blacksmiths.....	1	1 20		
Do....helpers..	1	90		
Carpenters.......	1	1 75		
Ore miners......	70	1 00		
Laborers.........	4	90		
Weighmen......	2	1 30		

Characteristics of Establishment.—Our No. 1 furnace had been in blast several years and was blown out May 22, 1875. This furnace is 12 feet across the boshes and made an average of about 100 tons per week.

Our No. 2 furnace was blown in on the 16th day of October, 1875. It is 15 feet across the boshes and makes an average of 200 tons per week.

E. & G. BROOKE,
per Geo. W. Harrison.

MONOCACY FURNACE CO.

Monocacy Station P. O., Berks county, Pa.

Quantity in tons and value in dollars of annual product: 8,000 tons gross pig iron, value varying from $160,000 to $300,000.

Whole number of persons employed: 50.

CLASSIFICATION.	No. of men......	Daily wages paid men	REMARKS.
Manager	1	....	The furnacemen, fillers, &c. will average from 300 to 325 days out of the year when furnace is in blast.
Foundrymen	1	$2 00	
Keepers	2	1 50	
Do. . helpers	3	1 40	
Fillers	8	1 20 & 1 25	The laborers will not average over 250 days out of the 365.
Cindermen	4	1 30	
Engineers	2	1 75 & 1 40	
Fireman	1	1 20	
Blacksmith	1	1 50	
Carpenter	1	2 00	Ore is mined by contract.
Laborers and carters	20 to 25	90 to 1 10	
Weighmen	2	1 25	
Carman	1	1 30	
Stable man	....	1 50	

Characteristics of Establishment.—The Monocacy Furnace is situated in Union township, Berks county, on the line of the Schuylkill canal. It is also within easy reach of the Philadelphia and Reading railroad, access to which is had by a substantial iron bridge across the Schuylkill river. Coal, magnetic iron ore and limestone are all received by canal, the local hematite ores being supplied by rail. The furnace is 50 feet high, with 14 feet bosh, the lining is of the double cone style. The gases are controlled by the Bell & Hopper arrangement, and condensed by two hot-blast ovens, as well as two sections of boilers, consisting of two boilers each. The blast is furnished by a double horizontal blowing engine, having two steam cylinders, two blowing tubs and two large fly wheels. The weekly make of furnace varies from 150 to 200 tons, depending upon the richness of the stock used and the season of the year. The furnace company mines nearly all the hematite ore used. The supply of rich magnetic ore is drawn principally from New York State.

MONOCACY FURNACE CO.

FERGUSON, WHITE & CO.

Robesonia P. O., Berks county.

Quantity in tons and value in dollars of annual product: 4,662 tons of 2,240 pounds, anthracite pig iron, value $22 per ton, $102,564,

Whole number of persons employed: 63.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operat'n during year	REMARKS.
Manager and clerk, (1 each,)	2		$11 25		36 weeks.	
Founder	1		2 33			
Keepers	2		1 75			
Do....helpers	3		1 40			
Fillers	8		1 40			
Gutterman and weighing	2					12 cents per ton.
Cindermen	4		1 40			
Engineers	2		1 88			
Blacksmiths	1		1 75			
Carpenters	2		2 00			
Ore miners	14	2	1 30	$ 40		
Laborers	18		1 15			
Ore burner	1	1	1 25	40		

Characteristics of Establishment.—No. 1 furnace out of blast all the year 1875.

No. 2 furnace in blast 36 weeks during 1875.

Name of works: Robesonia furnaces.

FERGUSON, WHITE & CO.

TOPTON, BERKS CO., PA.

Pig iron.

Quantity in tons and value in dollars of annual product: 1,290 gross tons, about $25,000.

Whole number of persons employed: 40.

CLASSIFICATION.	No. of men	Daily wages paid men	Time in operation during year.
Foundryman	1	$3 30	In blast till Februury 5th, when we blew out for want of coal.
Keepers	2	1 80	
Do....helpers	4	1 65	
Fillers	8	1 55	
Cindermen	8	1 55	
Engineers	3	1 88	
Blacksmith	1	1 70	
Carpenter	1	1 70	
Laborers	10	1 10	
Weighmen	2	1 50	

Characteristics of Establishment.—On account of a change the firm is without a name at present, and on account of the old company having the books I am not able to give as full a report as perphaps you would like, nor correct as I would like it.

BENJ. POTT.

BLAIR COUNTY.

JOHN ROYER, P. O. ROYER, BLAIR CO.

Value in dollars of annual product: $52,000.

Whole number of persons employed: 95.

CLASSIFICATION.	No. of men....	No. of boys	Daily wages paid men...........	Daily wages paid boys..........	REMARKS.
Manager	1	....	....	......	The Furnace is in operation about 10 months in the year.
Foundryman	1	....	$2 00	......	
Keepers	2	....	....	......	
Fillers	2	....	1 00	......	
Gutterman	1	....	1 50	......	
Stoker	1	1	1 00	......	
Blacksmith	1	....	1 50	......	
Do.....helpers	2	....	1 00	......	
Carpenters	1	....	1 50	......	
Laborers	15	10	90	60	
Colliers	12	....	1 00	......	
Wood choppers	40	10	37½ per cord.	......	
Farm hands	4	3	1 00	60	
Clerk	1	....	2 00	......	
Storekeeper	1	....	2 00	......	

JOHN ROYER,
Per A. M'ALLISTER.

S. C. BAKER, ALTOONA, PA.

Pig iron.

Quantity in tons and value in dollars of annual product: 400 tons, $20,100.

Whole number of persons employed: 41.

CLASSIFICATION.	No. of men	No. of boys......	Daily wages paid men..........	Daily wages paid boys.........	Time in operat'n during year...	REMARKS.
Manager and foundrymen.......	1	....	$2 33	....	53 days.	
Keepers	2	....	1 35	....	....	
Do....helpers	2	....	1 10	....	....	
Fillers..............................	4	....	1 20	....	....	
Gutterman and cindermen......	2	....	1 25	....	....	
Stokers...........................	3	1	1 00	40 cts.	....	
Engineers	2	....	1 45	....	....	
Blacksmiths and helpers, 1 each,	1	....	2 50	....	....	
Carpenters........................	2	....	1 25	....	....	
Ore miners, hematite	4	....	1 00	....	....	Loading ore,&c., not mining.
Do........fossil.................	4	....	1 25	....	....	Mining by ton.
Laborers...........................	3	....	1 00	....	....	
Cokers..............................	9	....	90	....	....	

S. C. BAKER.

BLAIR IRON AND COAL CO., HOLLIDAYSBURG.

Pig metal.

Quantity in tons and value in dollars of annual product: 2,572¼ tons, at $22, $56,595. All mill metal.

Whole number of persons employed: 40.

Foundryman 1, $3 00; blacksmith 1, $2 50; carpenter 1, $2 40; laborers 13, $1 00; foremen 2, $2 25, clerk 1, $2 50; furnace men 21, $1 27.

In operation five and one-half months.

W. R. BABCOCK, *Supt.*
M'C.

BLAIR IRON AND COAL COMPANY, HOLLIDAYSBURG, PA.

Pig metal.

Quantity in tons and value in dollars of annual product: 6,358½ tons, at $22, $140,481.

Whole number of persons employed: 50.

Foundryman 1, at $3 per day; blacksmith 1, $2 55; carpenter 1, $2 40; clerk 1, $2 50; foremen 2, $2 25; laborers 19, $1; furnacemen 25, $1 27.

W. R. BABCOCK, *Supt.*
M'C.

BLAIR IRON AND COAL COMPANY, HOLLIDAYSBURG, PA.

Pig metal—all Bessemer metal.

Quantity in tons and value in dollars of annual product: 5,767½ tons, at $30, $173,025.

Whole number of persons employed: 67.

Foundryman 1, $3 per day; blacksmith 1, $1 90; carpenter 1, $1 65; laborers 16, $1 20; clerk 1, $2 50; foremen 2, $2 20; furnacemen 45, $1 30. In operation one year.

W. R. BABCOCK, *Supt.*
G. C. M'CALVAN.

BLAIR IRON AND COAL CO., HOLLIDAYSBURG, PA.

Pig metal.

Quantity in tons and value in dollars of annual product: 4,445½ tons, at $22 and $40, $104,757. 942 tons of this amount spiegel metal.

Whole number of persons employed: 53.

Managers 2, $2 25 per day; foundryman 1, $3 00; blacksmith 1, $2 00; carpenter 1, $1 20; laborers 11, $1 00; clerk 1, $2 50; foremen 2, $2 20; furnace men 36, $1 27.

W. R. BABCOCK, *Supt.*
G. C. M'CALVAN.

BUCKS COUNTY.

COOPER & HEWITT, DURHAM IRON WORKS.

Reigelsville, Pa., and 17 Burling Slip, New York.

Manufacture pig iron.

Quantity in tons and value in dollars of annual product: 20,000 tons.

Whole number of persons employed: 177.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men	Daily wages paid boys....... ..	Time in operation during year...	Remarks.
Manager	1					
Foundrymen	2					
Keepers	2		$1 45			12 hours' w'k
Do....helpers	4		1 20			“ “
Fillers	8		1 20			“ “
Stokers	4		1 15			“ “
Cindermen	4		1 20			“ “
Engineers	3		1 45			“ “
Firemen	2		1 35			“ “
Blacksmiths	6		1 35			10 “ “
Do.......helpers	4		1 05			“ “
Carpenters	5		2 00			“ “
Ore miners	78	4	1 10	$0 60		“ “
Weighman	1		1 10			“ “
Stevedors, teamsters, and general outside laborers	27	11	1 00			“ “
Farmers	6	4	1 00	65		“ “
Limestone quarry	11	2	1 10	60		“ “
Moulders	3		2 25 1 65 1 40			“ “
Painter	1		2 25			“ “
Machinists	3		2 00			“ “

Characteristics of the Establishment.—Works are out of blast just now; expect to go in again in a week or two. One anthracite blast furnace 76 ft. high; 19 ft. 6 in. bosh; 16 ft. diameter at tunnel head; 7 ft. 6 in. diameter at hearth; cubic capacity 15,671 ft.; 5,6 in. tuyeres; Lurmanars closed front and cinder notch; 8 ovens containing 10,140 square feet heating surface; temperature of blast 800° to 1,000° Far.; 2 best engines, blowing cylinder 84 in. diameter by 48 in. stroke; steam 44 in. diameter by 48 in. stroke; full capacity 24 revolutions per minute, both engines; 4 sets of 3 boilers, each 36 in. diameter by 65 ft. long; round boilers 26 in. diameter by 50 ft. long; brick stack 100 feet high. Works built in 1874, 1875 and 1876.

B. F. FACKENTHAL, Jr., *Supt.*

CAMBRIA COUNTY.

CAMBRIA IRON CO., JOHNSTOWN, PA.

Mill and bessemer pig iron.

Quantity in tons and value in dollars of annual product: 25,477 tons, $600,000.

Whole number of persons employed: 101.

CLASSIFICATION.	No. of men	Daily wages paid men	Time in operation during year
Manager	2	$2 00 to $10 00	10 months.
Foundryman	1	2 25	
Keepers	6	1 70	
Do....helpers	24	1 40	
Fillers	16	1 40	
Stokers	14	1 40	
Cindermen	6	1 40	
Engineers	5	1 60 to 2 15	
Firemen	4	1 25	
Blacksmith	1	1 50	
Do.......helper	1	1 05	
Carpenter	1	1 40	
Laborers	20	1 05	

IRON ORE MINES.

	No. of men	Daily wages.	No. boys	Daily wages	
Ore mines	180	$1 50 to $1 75			Paid by the ton.
Outside laborers	18	1 00 to 1 10			Paid by the day.
Inside laborers	3	1 10			Do.
Outside mechanics	2	1 50			Do.
Mule drivers			30	65c to 70c.	Do.
Mining overseer	1	4 00			Do.
Weighman	1	2 00			Do.

Total persons employed, 235. Tons mined, 65,000, $162,500. Time at work, 12 months.

CAMBRIA IRON CO.,
Per Geo. A. Bates.

CENTRE COUNTY.

CONSTANS CURTIN & CO.

Roland P. O., Centre co., Pa.

Cold blast charcoal pig metal.

Quantity in tons and value in dollars of annual product: 1,800 tons of 2,000 pounds. We do not sell any, but have estimated the blooms in former paper at $70, which includes the pig metal.

Whole number of persons employed: 118.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men............	Daily wages paid boys	Time in operation during year....
Manager..................	1	....	....	....	About 10 months.
Foundrymen............	1	....	50 per ton.		
Keepers..................	2	....	25 per ton.		
Wood boss*..............	....	....	$600 00 per year.		
Fillers.....................	2	....	25 00 per month.		
Gutterman................	1	....	25 00 per month.		
Stockers..................	2	2	40 per ton, including boys.		
Engineers at ore banks...	2	....	50 00 per month.		
Firemen at one ore bank..	1	....	25 00 per month.		
Blacksmiths†............	2	....	40 00 per month.		
Colliers & wood haulers,‡	35	....	45 00 to 30 00 per month.		
Carpenters...............	3	....	1 75 per day.		
Ore miners§..............	30	7	1 12 per day...........	50 & 75c per day	
Laborers..................	2	....	1 12 per day.		
Coal stocker.............	1	1	30 per load.		
Teamster.................	7	....	30 00 per month.		
Farmers on farm.........	3	....	20 00 and 16 00 per mo. and board.		
Care of stock in stables...	1	1	30 00 per month........	$15 00 per mo.	
Teams at ore banks and hauling ore from bank besides our own........	5	....	45 per load, and $1 75 per ton for distance		
Miller....................	1	....	According to grain ground.		
Clerks in store...........	3	....	$40 00 per mo. & boarded.		
Book keeper.............	1	....	600 00 per year.		

Characteristics of Establishment.—Roland Curtin built furnace within half a mile of present furnace on small stream of water flowing out of Nittany Valley. Near about the same time the forge was built. The old Eagle furnace, as it was called, was abandoned between 1832 and 1836, and another furnace was built 16 miles further up on the Bald Eagle creek, on large tract of land then owned by him. That furnace was called "Martha." It was abandoned and sold in 1848, and the present Eagle furnace was built the same year by his sons, R. C. & J. Curtin, which furnace is still in operation, being operated by the present firm of C. Curtin & Co. One son of Roland Curtin composes the present firm, in connection with grandsons of Roland Curtin. The ores for this furnace are the "brown hematites" of Nittany Valley, (use no fossil ores at all.) The ores are mined on the company's own land, except a few tons purchased from a pipe ore bank from near Boalsburg, Centre co., Pa. Quality of ore unquestioned as to softness and strength. We make our ore perfectly clear of all sand or any other thing foreign to iron ore for making pig metal. We use one of Bradford's patent ore separators for separating flint from ore. Use on an average 110 bushels of charcoal to ton of 2,240 lbs. metal, and 4,270 lbs. ore to ton of 2,240 lbs. metal. Charge, 20 bushel coal to 875 lbs. ore and 70 lbs. limestone for each charge in furnace. Old fashioned wooden tub blast, an overshot and undershot wheel combined. We are putting in a new iron cylinder blast for furnace of the most powerful kind, at weekly yield of furnace about 44 tons of 2,240 pounds. Haul the ore about 3 miles. Own about 8,000 acres timber land, from which we get our charcoal, which we cool on the ground, and haul from 1½ to 4½ miles. Furnace situated on same head race, about 500 hundred feet from forge.

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* Attends coolings, taking up wood, making roads and assisting to manage the property and works.

† Colliers employed in summer 6 months, and chops the wood in winter.

‡ Colliers and wood haulers for forge and furnaces together.

§ We contract for coal and ore with parties who employ a number of hands, which I have not included in this statement.

C. CURTIN & CO.

CLARION COUNTY.

REYNOLDS & MOORHEAD, RED BANK, CLARION CO.

Manufacturers pig metal.

Quantity in tons and value in dollars of annual product: 6,000 tons, value $120,000.

Whole number of persons employed: 200.

Manager 1, $1,500 per year; foundryman 1, $1,200; keepers 2, $1 65 per day; helpers 2, $1 40; fillers 6, $1 40; gutterman 3, $1 65; stockers 7, $1 25; engineers 2, $2 10; firemen 2, 85 cents; blacksmith 1, $2 25; carpenter 1, $2 75; ore miners 100, $1 25; laborers 12, $1 25; weighman 1, $1 75; coal miners 50, $1 25.

DAVID REYNOLDS.

COLUMBIA COUNTY.

THE BLOOMSBURG IRON CO., BLOOMSBURG, PA.

Manufacturers of pig iron.

Quantity in tons and value in dollars of annual product: 5,082 gross tons of 2,240 lbs.; made $116,400.

Whole number of persons employed: 144 men, 15 boys.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Manager	1	....		....	All the year one stack in blast.	Business very dull and unremunerative; cannot get cost for product.
Foundryman	1	....		....		
Keepers	2	....	$1 50	....		
Do...helpers	2	....	1 14	....		
Fillers	6	....	1 14	....		
Cindermen	6	....	1 14	....		
Engineers	2	....	1 62½	....		
Blacksmith	1	....	1 75	....		
Do....helper	1	....	1 25	....		
Carpenters	2	....	2 25	....		
Ore miners	87	15	$4, $8 pr wk.	$ 65		
Laborers	13	....	1 10	....		
Weighmen	2	....	1 14	....		
Teams and teamsters	12	....	$30 per mo.	....		
Book-keepers	2	....	3 00	....		
Clerks	4	....	2 00	....		

Characteristics of Establishment.—Two small furnaces, only one in blast since November 1873.

THE BLOOMSBURG IRON CO.,
Per E. R. Drinker.

WILLIAM NEAL & SONS, BLOOMSBURG, COLUMBIA CO.

Manufacture pig metal.

Whole number of tons, 8,217, value, $165,000.

Number of persons employed, 220 ; 200 men and 20 boys.

Wages, men average about $1 00 per day, and boys 50 cents. We manage the establishment ourselves. In operation during the year.

CUMBERLAND COUNTY.

C. W. & D. V. AHL, CARLISLE, CUMBERLAND COUNTY.

Charcoal pig iron.

Quantity in tons of annual product: 1,800 tons.

Whole number of persons employed : 206 men during the year.

CLASSIFICATION.	No. of men......	Daily wages paid men	Time in operation during year....
Manager	1	$1,000 per year.	10 mos.
Foundryman	1	540 "	
Keepers	2	1 20 pr day	
Fillers	2	1 20 "	
Guttermen	2	1 00 "	
Stokers	2	1 00 "	
Blacksmiths	2	1 15 "	
Carpenters	2	1 10 "	
Ore miners	15	90 "	
Laborers	10	90 "	
Weighmen	2	90 "	
Wood choppers	110	30 pr c'rd	
Colliers	40	35 00 pr mo	
Teamsters	15	22 00 "	

Characteristics of Establishment.—Furnace built in 1762 and re-modeled; size 28 by 9; charcoal, making 50 tons per week out of limestone ores; 120 bushels to the ton of charcoal; $2\frac{1}{4}$ tons of ore to the ton of iron; iron made into blooms at the same works; product of works during 1875, 1,800 tons; the iron is used entirely for boiler plates and sheet iron, when made into blooms in this forge.

C. W. AHL, *General Manager.*

DAUPHIN COUNTY.

J. &. J. WISTER, HARRISBURG, PA.

Manufacture pig iron.

Quantity in tons and value in dollars of annual product: 7,139 tons, of 2,268 pounds, representing in value on our books to the amount of $169,589.

Whole number of persons employed: 35.

CLASSIFICATION.	No. of men.....	Daily wages paid men..........	Time in operation during year.	REMARKS.
Manager	1		365 days and nights.	Our furnace ran without intermission during 1875 day and night.
Foundryman	1	$2 74	"	
Keepers	2	1 54	"	
Do....helpers	2	1 30	"	
Fillers	10	1 22	"	
Guttermen	4	1 22	"	
Engineers	2	2 24 1 54	" "	
Blacksmith	1	1 83	"	
Carpenter	1	1 83	"	
Laborers	6	1 10	"	
Weighman	1	1 31	"	
Conductors	2	1 46	"	
Carter	1	1 14	"	
Clerk	1		"	

J. & J. WISTER.

M'CORMICK & CO., HARRISBURG, PA.

Manufactures of pig iron.

Quantity in tons and value in dollars of annual product: 3,980 tons; $91,540.

Whole number of persons employed. See remarks.

CLASSIFICATION.	No. of men......	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....	REMARKS.
Manager	1				No. 1 furnace in blast 5½ mos. No. 2 furnace in blast 1½ mos.	All men in connection with the working of the furnaces were "thrown out" when the furnaces were "blown out" except on an average about fifmen.
Foundrymen	1					
Keepers	8		$1 66			
Do....helpers	8		1 44			
Fillers	4		1 35			
Guttermen	4		1 35			
Stockers	12		1 35			
Cindermen	8		1 44			
Engineers	4		1 80			
Blacksmith	2		2 25			
Do....helper	2		1 25			
Carpenters	2		2 25			
Ore miners	25		*			
Laborers	15		1 25			
Quarrymen and laborers	30		1 35			
Superintendent	1					

* $1 25 and contract.

M'CORMICK & CO.,
Paxton Furnaces.

THE CAMERON FURNACE COMPANY, MIDDLETOWN, PA.

W. Hayes Grier, Esq.:

Dear Sir:—Having been out of blast for the last two years, doing nothing whatever in our business and employing no men, we are sorry to say that we have no materials to make out a statistical report. Hoping, howeverr, that business may improve *sometime*, so that we may have something to report.

We remain yours truly,

J. H. LANDIS, *Treasurer*.

PENNA. STEEL CO., STEEL WORKS P. O.

Quantity in tons and value in dollars of annual product: for the year 1876, 17,026 tons, $425,650.

Whole number of persons employed: 173.

Foundryman, 1; keepers 4, $1 62; helpers 8, $1 32; fillers 24, $1 25; cindermen 14, $1 32; engineers 4, $1 62; blacksmith 1, $1 62; laborers 114, $1 00; watchman 1, per month $40; train conductor 2, $1 45.

L. S. BENT, *Supt.*

FRANKLIN COUNTY.

MONT ALTO IRON CO., MONT ALTO, FRANKLIN CO., PA.

Pig iron.

Quantity in tons and value in dollars of annual product: 2,498 tons, 2,240 pounds, $69,944.

Whole number of persons employed: 216.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year.	REMARKS.
Manager	1				365 days.	
Foundryman	1		$1 66⅔		223 days.	
Keepers	2		1 25		"	
Do.... helpers	2		1 15		"	
Fillers	3		1 15		"	
Gutterman	2		1 15		"	
Stokers	3		1 15		"	
Engineers	5		1 28		317 "	Includes those at mines, &c.
Blacksmiths	3		2 02		300 "	Includes all shops.
Do....... helpers	3		1 25		300 "	Includes all shops.
Carpenters	8		1 43		275 "	Includes wheelwrights.
Ore miners	60		90		275 "	
Laborers	17	18	90	50	275 "	
Weighman	1		1 16		275 "	
Machinist	1		2 00		200 "	
Teamsters	14		1 00		250 "	
Foremen, bosses, &c.	8		2 00		300 "	
Wood choppers, colliers, helpers, &c.	59		1 05		75 "	
Moulder	1		1 25		220 "	
Clerks, storekeepers, &c.	4		2 00		350 "	

Characteristics of Establishment.—The blast furnace, forge, ore mines, shops, collieries, lands and railroad at Mont Alto are all under one management.

The business requires many more men some portions of year than others.

GEO. B. WIESTLING, *Supt.*

HUNTER & SPRINGER, CHAMBERSBURG, PA.

Cold blast charcoal wheel iron.

Quantity in tons and value in dollars of annual product: 1,164½ tons of 2,240 lbs.; $39,593.

Whole number of persons employed: about 75.

Manager 1, $50 per month; foundryman 1, $50; keepers 2, $26; fillers 2, $24; gutterman 1, $24; stocker 1, $24; blacksmith 1, $1 25 per day; carpenter 1, $1 50; ore miners 12, 80 cents; laborers 3, 90 cents; clerk 1, $450 per year; in operation 8 months. Balance of persons employed at wood chopping, coaling, wood hauling, teaming, &c.

HUNTER & SPRINGER.

R. M. SHALTER.

Carrick Furnace P. O., Franklin county, Pa.

Cold blast charcoal pig iron.

Quantity in tons of annual product: 1,200 tons, about 400 hundred tons not sold yet, the most of the iron was sold for about $27 per ton on board of cars at Richmond station, four miles below the furnace. Had 9,000 cords of wood cut last year, would take about 50 wood cutters six months in a year. They are paid a certain amount per cord; could not say for certain how many were cutting. After the holidays most of the wood is cut. They generally continue cutting until harvest and bark peeling. Taking the average I think one man will cut about two cords per day and rank it. Last year I paid on an average 37 cents per cord. The furnace was about ten months in blast. After the total expenses were sumed up the balance was on the wrong side.

Whole number of persons employed; Manager, 1, $500 per year and boarded; foundryman, 1, $40 per month with house rent free; keeper, 1, $28 per month; keeper's helper, 1, $28 per month; fillers, 2, $28 per month; gutterman, 1, $28 per month; blacksmith, 1, $1 75 per day; blacksmith's helper, 1, $1 25 per day; carpenter, 1, $1 25 per day; ore miners, 8 men, 2 boys, 90 cents per day, do not employ regular miners, work the ore bank open cut; laborers, 2, $26 per month; weighman, 1; store keeper, 1, $600 per year, he finds himself; miller, 1, $450 per year, must pay board; colliers, 12, $1 50 per hundred bushels, the colliers pay about $30 per month to the helper; wood draggers, 4 men, 2 boys, 15 cents per cord on an average; keep 4 teams, mostly 6 mules in a team, the carters got $26 per month.

It cost last year a trifle over $2 00 per ton to send the pig iron to Harrisburg, $4 41 to Philadelphia, railroad tariff. Under the present prices the pig iron cannot be made for what it brings in the market.

R. M. SHALTER.

LANCASTER COUNTY.

BENSON & COTTRELL, DONEGAL FURNACE, COLUMBIA P. O.

Donegal furnace was out of blast during the entire year of 1875, and consequently we can make no report, as we employed no men other than necessary watchmen, &c., to look after our idle works.

Respectfully,

BENSON & COTTRELL.

ETHELBERT WATTS.

Manufacturer of pig iron, Marietta, Lancaster county, Pa.
Quantity in tons: About 5,000 tons.
Whole number of persons employed: 25 men, (no boys,) day and night.

CLASSIFICATION.	No. of men	Daily wages paid men............	Time in operation during year.....	REMARKS.
Manager and assistant.....	2	Paid per mo...	About 1 year....	Furnace known as Marietta furnace No. 2.
Founder..................	1	Paid per mo...	....	No margin of profit at all in the business except under very peculiar circumstances.
Keepers	2	$1 50	....	
Do....helpers	2	1 30	....	
Fillers.....................	8	1 20	....	
Gutterman	1	1 25.........	....	
Limestone breaker........	1	1 00	....	
Cindermen	2	1 25	....	
Engineers	2	1 55, 1 20	....	
Blacksmiths...............	1	1 50	....	
Do....helpers	1	1 00	....	
Carpenters, when required,	....	1 50	....	
Ore miners, laborers and weighmen*				

* According to my contract upon which my furnace is at present running, coal, ore and limestone is furnished to me.

ETHELBERT WATTS.

CHESTNUT HILL IRON ORE COMPANY, COLUMBIA.

Manufacture of pig iron.
Out of blast since April 1, 1875.

C. J. NOURSE, *Supt*.

E. HALDEMAN & CO., CHICKIES.

Quantity in tons and value in dollars of annual product: 11,797½ tons of 2,240 lbs.; $272,758 20.

Whole number of persons employed: 167.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........		Daily wages paid boys..........	Time in operation during year....
			9 mos.	3 mos.		
Manager	......	......	......	......	......	In operation during the whole year.
Foremen	2	......	$2 00	$2 00	......	
Keepers	4	......	1 50	1 40	......	
Do....helpers	4	......	1 30	1 20	......	
Fillers	14	......	1 20	1 10	......	
Gutterman	1	......	1 30	1 20	......	
Do	2	......	1 20	1 10	......	
Cindermen	4	......	1 30	1 20	......	
Engineers	4	......	1 30	1 20	......	
Blacksmith	1	......	1 60	1 60	......	
Do	1	......	1 30	1 30	......	
Carpenter	1	......	2 00	1 75	......	
Laborers	3	......	1 20	1 10	......	
Do	17	......	1 00	90	......	
Car conductors	3	......	1 50	1 40	......	
Boss quarryman	1	......	1 70	1 60	......	
Quarrymen	7	......	1 25	1 15	......	
Stable boss	1	......	1 30	1 20	......	
Clerk	1	......	2 00	2 00	......	
Do	1	......	1 00	1 00	......	
ORE MINES.						
Superintendent	1	......	$2 50	$2 50	......	
Foreman	1	......	1 33	1 33	......	
Do	1	......	1 17	1 17	......	
Engineer	1	......	1 30	1 30	......	
Do	2	......	1 10	1 00	......	
Miners and laborers	87	2	90	80	$0 50	

E. HALDEMAN & CO.

LAWRENCE COUNTY.

NESHANNOCK IRON CO., NEW CASTLE, LAWRENCE CO., PA.

Pig iron.

Quantity in tons and value in dollars of annual product: 13,920 gross tons Bessemer iron made on contract price; value, $382,800.

Whole number of persons employed: 27 is a fair average.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys......	Time in operation during year...
Manager	1	....	$7 00	....	365 days.
Foundryman	1	....	3 00	....	“
Keepers	2	....	2 00	....	“
Do...helpers	2	....	1 75	....	“
Fillers	8	....	1 75	....	“
Cindermen	2	....	1 75	....	“
Engineers	2	....	2 12½	....	“
Blacksmith	1	....	1 75	....	“
Laborers	6	....	1 40	....	‘
Cinder cart drivers	2	....	1 50	....	“

W. E. REIS, *Manager*.

Banking House of Foltz & Sons,
New Castle, Pa., *June* 19, 1876.

W. Hayes Grier, Esq.,

Dear sir:—Our furnace has been abandoned over two years, and has since fell down.

Yours truly,
SAM'L FOLTZ.

REIS, BROWN & BERGER.

New Castle, Pa. Little Pit furnace.

Quantity in tons: 2,769 gross tons.

Whole number of person employed: 28.

CLASSIFICATION.	No. of men	Daily wages paid men...........	Time in operation during year.....	REMARKS.
Foundrymen	1	$3 00	9 mos.,	Blowed out Oct. 1, 1875. Has not been in operation since.
Keepers	2	1 80		
Do....helpers	2	1 62½		
Fillers	3	1 62½		
Gutterman	2	1 75		
Stockers	3	1 62½		
Cindermen	2	3 87	....	And horse and cart.
Engineers	2	2 50		
Firemen	2	1 35		
Blacksmiths	1	2 25		
Carpenters	1	3 00		
Ore miners	.....	....	....	Ore and coke purchased delivered on cars at the furnace.
Laborers	5	1 35		
Weighmen	1	1 50		
Clerk	1	2 50		

Characteristics of Establishment.—Furnace erected by Moffett & Bro. in 1870. Height of stack, 45 feet; diameter of bosh, 9 feet. Purchased by Reis, Brown & Berger in 1871, and remodeled. Product mostly No. 1 foundry metal of a very superior quality. Ores used, ¾ Lake Superior and ¼ Native.

REIS, BROWN & BERGER,
Per POWERS.

REIS, BROWN & BERGER, NEW CASTLE, PA.

Pig metal, Rosena furnace.

Quantity in tons and value in dollars of annual product: 2,219 gross tons.

Whole number of persons employed: 61.

CLASSIFICATION.	No. of men......	Daily wages paid men	Time in operation during year....
Manager	1	$6 50	Full time.
Foundryman	1	3 00	"
Keepers	2	2 00	"
Do....helpers	4	1 75	"
Fillers	8	1 75	"
Guttermen	4	1 90	"
Stockers	8	1 75	"
Cindermen	8 4 horses.	1 87½	"
Engineer	1	3 00	"
Do	1	2 50	"
Assistant engineer	1	2 00	"
Firemen	3	1 50	"
Blacksmith	1	3 00	"
Do......helper	1	2 00	"
Carpenter	1	3 25	"
*Ore miners	....	....	"
Laborers	4	1 25	
Weighman	1	1 50	"
Brick mason	1	2 00	"
Team hauling sand	1	3 00	"
Horses and carts hauling ore, &c	2	2 50	"
Unloading coke	2	2 00	"
Unloading ore	4	1 45	"
Do.....do	3	1 25	"
Clerk	1	4 00	"

* Purchased ore and coke delivered at the furnace, also limestone.

Characteristics of Establishment.—Furnace erected in 1872. Height of stack 75 feet; diameter of bosh 20 feet; ores used, three-fourths Lake Superior with one-fourth native and mill cinder. Consume most of the product in the manufacture of iron and nails in our own works.

REIS, BROWN & BERGER.

WAMPUM FURNACE CO.

Wampum, Lawrence county, Pa.

Mill iron.

Quantity in tons and value in dollars of annual product: 4,000 tons; $76,000.

Whole number of persons employed: 35.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....
Foundrymen	1	....	$5 00	....	8 months
Keepers	2	....	2 22	....	....
Do...helpers	2	....	1 87	....	....
Fillers	6	....	1 87	....	....
Stockers	4	....	1 25	....	....
Cindermen	2	....	1 45	....	....
Engineers	2	....	2 25	....	....
Blacksmiths	1	....	2 00	....	....
Laborers	14	....	1 25	....	....
Clerk	1	....	3 00	....	....

WAMPUM FURNACE CO.

LEBANON COUNTY.

R. W. COLEMAN'S HEIRS.

Donaghmore furnace, Lebanon, Pa.

Quantity in tons and value in dollars of annual product: 4,000 tons; don't know value till the iron is sold.

Whole number of persons employed: 28.

Manager 1; foundryman 1, at $2 75 per day; keepers 2, $1 75; helpers 2, $1 40; fillers 6, $1 40; cindermen 2, $1 40; engineers 2, $1 75 and $1 50; blacksmith 1, $1 50; carpenter 1, $1 50; laborers 6, $1 10; boys 3, 60 and 85 cents; weighman 1, 12 cents per ton; in operation all the year. Furnace in blast eight (8) months; men found work all year.

Characteristics of Establishment.—Anthracite furnace; boshes 14 feet; height 41 feet.

For R. W. COLEMAN'S HEIRS,
D. S. HAMMOND.

J. & R. MEILY, LEBANON, PA.

Manufactures of pig metal.

Quantity in tons of annual product: 5,000 tons of 2,240 lbs.

Whole number of persons employed: 29.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men...........	Daily wages paid boys..........	Time in operation during year...
Manager	1	.....	$3 00	....	In operation the whole year.
Foundryman	1	.....	3 00	....	
Keepers	2	.....	1 40	....	
Do......helpers	2	.....	1 15	....	
Fillers	6	.....	1 05	....	
Guttermen	2	.....	1 25	....	
Stocker	1	.....	2 00	....	
Engineers	2	.....	1 20	....	
Ore miners	10	.....	1 00	....	
Laborers	2	.....	1 00	....	

Nineteen men at furnace, ten at ore bank.

J. & R. MEILY.

WM. M. KAUFMAN & CO., SHERIDAN, LEBANON CO., PA.

Anthracite pig iron.

Quantity in tons and value in dollars of annual product: 5,181 tons, value, $114,442 43.

Whole number of persons employed: 40.

In blast nine months.

WM. M. KAUFMAN & CO.,
Per D. A. W.

NORTH CORNWALL FURNACE.

W. C. Freeman, general superintendent; H. C. Grittinger, manager, Cornwall P. O., Lebanon county, Pa.

Manufacture Cornwall anthracite pig iron.

Quantity in tons and value in dollars of annual product: Were in blast only during November and December, and can give no definite answer. Estimated annual product, 8,000 tons.

Whole number of persons employed: 29.

Manager and clerk 2; foundryman 1, at $3 50 per day; keepers 2, $1 60; 1st helpers 2, $1 30; 2d helpers 2, $1 25; fillers, bottom, 4, $1 25; fillers, top, 2, $1 45; guttermen 2, $1 45; stockers 2, $1; cindermen 2, $1; engineers 2, $1 80 and $1 60 ; blacksmith 1, $1 75 ; carpenter 1, $1 75 ; laborers 3, $1 ; weighman, (pig iron,) 11 cents per ton ; in operation two months.

Characteristics of Establishment.—The furnace is 52 by 15 feet, has an iron jacket or casing, is built on columns and mantels and has a closed top and five tuyeres. Blast is heated in two hot ovens, each 16 by 22 feet ; the pipe having a heating surface of nearly 5,000 square feet. Steam is generated in two nests of duplex boilers 59 feet long, four boilers to a set. The engine is a direct acting vertical one, with seven feet stroke ; steam cylinder 42 in. and blowing cylinder 84 in. in diameter ; casting house is built of brick and is 50 by 85 feet ; engine house is also built of brick and is 38 by 42 feet ; stock house and hoisting towers are built of limestone, sandstone and brick. The furnace was completed in the fall of 1873, occupied two years in building, and was blown in in latter part of October, 1875.

HENRY C. GRITTINGER, *Manager.*

R. W. COLEMAN'S HEIRS & CO., CORNWALL, PA.

Pig iron.

Quantity of tons and value in dollars of annual product : 8,615 tons ; value not ascertainable till sold, estimated $172,300.

Whole number of persons employed : 48.

CLASSIFICATION.	No. of men.....	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....
*Manager					Througho't 1875.
Foundryman	1		$3 43		
Keepers	4		1 75		
Do. . helpers	4		1 40		
Fillers	12		1 40		
Stockers	1	1	1 10	$0 70	
Cindermen	4		1 40		
Engineers	2		$2 and 1 75		
Blacksmith	1		2 30		
Do. . . . helper	1		1 60		
Carpenters	2		$2 23 and 1 60		
Laborers	9		1 10		
Weighmen	2		12c. per ton.		
Boys		5		70	

* No regular manager.

Remarks.—Two anthracite furnaces, 12x38 feet.

R. W. COLEMAN'S HEIRS & CO.,
Per A. WILHELM, *Attorney.*

LEHIGH COUNTY.

THOMAS IRON CO., HOKENDAUQUA, PA.

Pig iron.

Quantity in tons and value in dollars of annual product: 43,295½ gross tons. Average value at tide about $21 per ton.

Whole number of persons employed: 192.

CLASSIFICATION.	No. of men......	Daily wages paid men	REMARKS.
Manager	2	*	Of 8 furnaces 4 only in blast.
Foundrymen	3	$2 16 & $3 40	
Keepers	8	2 00	3 the whole year, 1 40 weeks.
Do...helpers	16	1 85	
Fillers	32	1 75	
Stockers, taking out iron	8	1 75	
Cindermen	6	1 65	
Engineers, locomotive & stationary,	11	2 00 & 2 15	
Firemen	6	1 40 & 1 50	
Blacksmiths	3	1 75 & 2 25	
Do.......helpers	3	1 25	
Carpenters	6	1 25 & 2 10	
Laborers	55	1 00 & 1 10	
Weighmen	5	1 75	
Masons	3	2 20	
Iron moulders, foundry	3	1 75 & 2 25	
Machinists	14	1 25 & 2 50	
Pattern-makers	2	1 25 & 1 75	
Brakesmen	6	85 & 1 40	

* July.

S. C. WOLLE,
Per Co.

LEHIGH VALLEY IRON CO., COPLAY, LEHIGH CO., PA.

Pig iron.

Quantity in tons and value in dollars of annual product: 28,000 tons pig iron; $560,000.

Whole number of persons employed: 105 men employed at furnaces.

CLASSIFICATION.	No. of men	Daily wages paid men	Time in operation during year
Manager	1		365 dys.
Foundrymen	2	$2 29	
Keepers	6	1 43	
Do....helpers	6	1 26	
Fillers	24	1 26	
Guttermen	12	1 26	
Stockers	3	95	
Cindermen	6	1 12	
Engineers	9	1 40	
Firemen	3	1 12	
Blacksmiths	2	1 62	
Do......helpers	1	95	
Carpenters	3	1 75	
Laborers	26	95	
Weighman	1	1 25	

B. S. LEVAN, *Supt.*

LEHIGH IRON CO , ALLENTOWN, PA.

Pig iron.

Not in blast since last report.

MERCER COUNTY.

STEWART IRON CO., SHARON, PA.

Pig iron.

Quantity in tons and value in dollars of annual product: 3,554 tons of 2,268 lbs. each; about $80,000.

Whole number of persons employed: 28.

CLASSIFICATION.	No. of men	Daily wages paid men	Time in operation during year
Manager	1		4 mos.
Foundryman	1		
Keepers	2	$2 00	
Do...helpers	2	1 75	
Fillers	6	1 75	
Engineers	2	2 25	
Blacksmith	1	2 00	
Do.....helper	1	1 25	
Carpenter	1	2 00	
Laborers	11	1 25	

Remarks.—Stewart iron works consist of two blast furnaces and muck mill. Only one blast furnace was in operation during year 1875, and it only during about four months. Muck mill has not been in operation since 1872.

STEWART IRON CO.,
Per FRANK MORRISON.

SPEARMAN IRON CO., SHARPSVILLE, MERCER CO.

Pig iron.

Quantity in tons and value in dollars of annual product: 7,793 gross tons, 2,268 pounds; value, $171,546.

Whole number of persons employed: 31 men.

Manager, 1; clerk, 1; foundryman, $3 per day; keepers 2, $1 75; helpers 2, $1 50; fillers 8, $1 50; iron carriers 3, $1 50; cinderman 1, $1 75; engineers 2, 1 $2 00, 1 $2 75; firemen 2, $1 50; blacksmith 1, $2 00; carpenter 1, $2 00; laborers 6, $1 25; 2 horses and carts, $1 50.

Characteristics of Establishment.—Two blast furnaces 14 feet boshes, 50 feet high; fuel, block coal mined in Mercer county. The furnace company owns no coal or ore mines; purchase the coal delivered in their stock house; use ore from the mines of Michigan adjacent to Lake Superior, which is transported from the mines by rail, a distance of from 8 to 60 miles, and delivered at Lake Superior or Green Bay ports, from thence transported by water carriage, a distance of 1,000 miles to the port of Erie, from thence by rail 75 miles to the furnace; limestone purchased at New Castle, in Lawrence county, and transported by rail to furnace, 25 miles. The number of men employed by the Furnace Company as given above, are the men actually engaged at the furnace, the Furnace Company having nothing to do with ore miners, coal miners or limestone miners. Have not been running both furnaces, only one in blast for 8 months of the year.

SPEARMAN IRON CO.

WESTERMAN IRON COMPANY.

Sharon, Mercer county, Pa.

Quantity in tons and value in dollars of annual product: 13,185$\frac{307}{2240}$.

Pig metal.

Whole number of persons employed: 61.

CLASSIFICATION.	No. of men....	No. of boys....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....
Manager	1	....	$4 80	......	No. 1 furnace 28 weeks, and No. 2, 42 weeks.
Foundrymen	1	....	2 00	......	
Keepers	4	....	1 70	......	
Do....helpers	4	....	1 60	......	
Fillers	14	....	1 65	......	
Stockers	2	....	1 37½	......	
Cindermen	2	....	4 50	......	
Engineers	4	....	2 06¼	......	
Firemen	2	....	1 50	......	
Blacksmiths	1	....	2 25	......	
Do....helpers	1	....	1 25	......	
Laborers	15	....	1 25	......	
Weighmen	2	....	2 50	......	
Watchmen	2	....	1 80	......	
Bricklayers	2	2	1 65	75	
Contractors	4	....	1 40⅔	......	

WESTERMAN IRON CO.,
Per D. ADAMS.

MIFFLIN COUNTY.

LOGAN IRON AND STEEL COMPANY.

Lewistown, Mifflin county, Pa.

Manufacturers of charcoal pig iron.

Quantity in tons and value in dollars of annual product: 1,147 tons pig iron, $43,586 00.

Whole number of persons employed: 78

CLASSIFICATION.	No. of men......	No. of boys...	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year....
Manager	1	....	$2 50	....	7 months.
Foundrymen	1	....	2 50	....	7 "
Keepers	1	....	1 25	....	7 "
Fillers	2	....	1 25	....	7 "
Gutterman	1	....	1 25	....	7 "
Stockers	2	1	1 25	75	7 "
Cindermen	1	....	1 22	....	7 "
Engineers	1	1	1 80	90	7 "
Blacksmiths	2	....	1 64	....	11 "
Do.......helpers	1	....	1 00	....	11 "
Carpenters	2	....	1 40	....	10 "
Ore miners	11	3	1 25	$1 00	6 "
Laborers	2	1	1 00	68	12 "
Wood choppers	25	....	1 00	....	3 "
Colliers and wood haulers	14	....	1 50	....	7 "
Teamsters	5	....	1 10	....	12 "

Characteristics of Establishment.—This company manufactures cold blast charcoal pig iron for car wheels, chilled rolls and forge purposes.

R. H. LEE, *Sup't.*

MONTGOMERY COUNTY.

POTTSTOWN IRON COMPANY.

Pottstown, Montgomery county, Pa.

Pig iron.

Quantity in tons and value in dollars of annual product: About 6 months' product, 4,669½ tons. Went out of blast May 8, 1875, blew in November 7, 1875.

Whole number of persons employed: 18 at blast furnace, 39 at ore mines.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Founder	1	.....	$5 50	.....	mos.
Keeper	1	.....	2 22	.....	“
Do. . helpers	2	.....	1 50	.....	“
Fillers	4	.....	1 35	.....	“
Weighers, top fillers	4	.....	1 50	.....	“
Stock breakers	2	.....	1 35	.....	“
*Cindermen	.....	.....	.....	.....	“
Engineers	1	.....	2 36	.....	“
Do	1	.....	1 66	.....	“
Water tenders	.....	2	.....	$0 75	“
ORE MINES.					
Blacksmith	1	.....	$1 40	.....	12 mos.
Carpenter	1	.....	1 50	.....	“
Ore miners	11	.....	1 50	.....	“
Do. . . . . . strikers	11	.....	1 25	.....	“
Laborers	10	1	1 10	$0 55	“
Engineers	3	.....	1 33	.....	“
Foreman	1	.....	2 31	.....	“

*Cinder removed by contract.

WM. H. MORRIS, *Treasurer.*

MONTGOMERY IRON CO., PORT KENNEDY, PA.

Make pig iron.

Quantity in tons and value in dollars of annual product: 7,688 gross tons, $177,000.

Whole number of persons employed: 32.

CLASSIFICATION.	No. of men.....	Daily wages paid men.........	Time in operation during year....
Manager	1	......	12 months.
Foundryman	1	$2 00	
Keepers	2	1 75	
Do. . helpers	2	1 60	
Fillers	8	1 60	
Cindermen	4	1 60	
Engineers	2	2 60 1 60	
Laborers	11	1 25	
Weighman	1	2 00	

Buy our ore.

JNO. W. ECKMAN, *Manager.*

D. O. & H. S. HITNER.

Pig iron.

Conshohocken, Montgomery co., Pa.

Quantity in tons and value in dollars of annual product: 8,087½, valued at $202,187$\frac{50}{100}$.

Whole number of persons employed: 45.

CLASSIFICATION.	No. of men	Daily wages paid men	Time in operation during year.
Manager	1	$2 75	360 Days average.
Keepers	4	2 00	270......do.
Do....helpers	4	1 60	270......do.
Fillers	10	1 60	269......do.
Cindermen	8	1 60	270......do.
Engineers	4	2 00	271......do.
Blacksmiths	2	1 50	269......do.
Laborers	10	1 50	269......do.
Weighmen	2	2 09	310......do

Characteristics of Establishment.—We have three blast furnaces, but only had one in blast during the whole of 1875. One in blast about 6½ months of the year, and the other was out of blast during the whole of 1875.

We do not employ any iron ore miners directly, but buy all our iron ore and limestone delivered at the furnaces at so much per ton.

D. O. & H. S. HITNER.

JAMES HOOVEN & SONS.

Norristown, Montgomery county, Pa.

Out of blast.

Characteristics of Establishment.—Furnace 55 feet high, 16 feet bosh, Lurmanar's patent front, open top, four players, eighteen pipe stoves, air hoist and all other modern improvements.

JAMES HOOVEN & SONS.

JAMES LANIGAN, SWEDELAND P. O.

Pig iron.

Quantity in tons and value in dollars of 68 days' product: 2,351 tons, $49,680.

Whole number of persons employed: 40 daily at furnaces, 130 every working day.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Manager	1		$4 00		68 days.
Foundryman	1		2 50		
Keepers	4		1 70		
Do...helpers	4		1 50		
Fillers	8		1 50		
Guttermen	4		1 50		
Stockers	3		1 25		
Cindermen	2		1 50		
Engineers	4		1 75		
Blacksmith	1		2 00		
Do.......helper	1		1 25		
Carpenter	1		1 75		
Ore miners	107		1 15		
Laborers	5		1 00		
Weighman		1		75	
Quarry men	16		1 25		
Locomotive engineer	1		2 25		
Do.....brakeman	1		1 70		
Railroad repairs	2		1 30		
Ore train conductors	3		1 75		

Characteristics of Establishment.—Two large stacks 65 feet high, 16 feet bosh, on the main line of Philadelphia and Reading railroad, with the Schuylkill river 100 yards from furnaces, 15 miles north of Philadelphia. Quiet and peaceful men.

JAMES LANIGAN,
Per B.

EDGE HILL IRON COMPANY, PHILADELPHIA P. O.

Pig iron.

Quantity in tons and value in dollars of annual product: 4,469 tons @ $25=$111,725.

Whole number of persons employed: 63.

CLASSIFICATION.	No. of men....	Daily wages paid men.........	Time in operation during year....	REMARKS.
Manager and foundrym'n	1	$8 21	6 mos	$3,000 per annum.
Keepers................	2	1 90	......	
Do..helpers.........	4	1 75	......	
Fillers..................	8	1 75	......	
Guttermen.............	2	1 65	......	
Stock carters	2	1 50	......	Our horses and carts.
Cindermen	4	1 65	......	
Engineers...............	2	2 25	......	Engine and boiler house destroyed by fire in June, 1875; the machinery damaged materially, since repaired.
Fireman—occasional.....	1	1 25	......	
Blacksmith.............	1	2 25	......	
Do......helper	1	1 25	......	Buildings not repaired permanently, but covered in to protect machinery from the weather.
Carpenters..............	2	2 25	......	
*Ore miners.............	10	1 75	......	
Laborers................	20	1 25	......	
Weighmen and carrying out iron...............	2	1 60	......	
Clerk..................	1	1 67	.....	

* Average in January.

Characteristics of Establishment.—Furnace situated in Montgomery county, on the line of the North Pennsylvania railroad, with side tracks extending from main track through stock house which affords facilities for dumping stock received by rail, to the floor below, which is on a level with the platform of air hoist, by which the materials are carried to the tunnel head. The hoist is operated by pressure from the receiver and can only be used when furnace is in operation. We use the bell and hopper.

WM. STOKES, *Treas.*

MONTOUR COUNTY.

WATERMAN & BEAVER.

Danville, Montour county, Pa.

Pig iron.

Quantity in tons and value in dollars of annual product: 3,610 gross tons; value $61,370.

Whole number of persons employed: 223.

Foundryman 1, $2 17 per day ; keepers 6, $1 50 ; helpers 6, $1 09 ; fillers 22, $1 09, and boys 2, 52 cts. ; guttermen 6, $1 09 ; cindermen 3, 97 cts. ; engineers 5, $1 50 ; firemen 3, $1 09 ; blacksmith 1, $1 39 ; helper 1, 97 ore miners 138, $1 33 ; laborers 28, 97 cts. ; weighman 1, $1 53 ; in operation 3 months.

Our three furnaces at Danville were in blast altogether on an average of only three months during the past year. Our Chulasky furnace has not been in blast since December, 1873.

WATERMAN & BEAVER.

GROVE BROTHERS.

Danville, Pa.

Pig iron.

Quantity in tons and value in dollars of annual product : 3,775 tons, value, $83,050 00.

Whole number of persons employed : 205.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	REMARKS.
Manager					One of the firm.
Keepers	4		$1 50		One furnace in operation 6 mos., and one 1 month.
Do....helpers	4		1 00		
Fillers	14		1 00		
Stockers	3		1 00		
Cindermen	8		1 00		
Engineers	2		1 50		
Firemen	2		95		
Blacksmiths	1		1 38		
Do........helpers	1		95		
Carpenters	2		1 75		
Ore miners	51				Work by the ton.
Laborers	11		95		
Weighmen	1		1 60		
Engineers, (ore mines,)	2		1 50		In operation 12 months.
Laborers......do	40		95		do.
Superinten's..do	2		80 00 per mo.		do.
Do.......... do	1		100 00 ...do...		do.
Haulers...... do	11				Haul by the ton.
Superi'ts, (coal mines,)	1		90 00 per mo.		In operation 6 months.
Do..........do	1		100 00 ...do...		do.
Miners........do	11		Work by the ton		do.
Laborers......do	23	9	1 50 and $2 25	40c. & $1	do.

GROVE BROS ,
Per R. M. GROVE.

NORTHAMPTON COUNTY.

GLENDON IRON CO., EASTON, PA.

Pig iron.

Quantity in tons and value in dollars of annual product: 24,742 tons pig iron made; value, $494,840.

Whole number of persons employed: 166.

Wages paid, 80 cents to $2 25 cents a day, includes ore miners, quarrymen, furnace men, engineers, carpenters.

CLASSIFICATION.	No. of men	No. of boys......	Daily wages paid men	Daily wages paid boys	Time in operation during year.
Foundrymen and machinists	29	....	$1 00 to $2 25	......	
Keepers Do....helpers Fillers Gutterman Stockers Cindermen	49	....	1 00 to 2 00	....	Full time 12 hours.
Engineers	4	4	1 50 to 2 00	80	
Firemen	2	....	1 00	......	
Blacksmiths	3	....	1 50 to 2 00	......	
Do....helpers	3	....	1 00 to 1 25	......	
Carpenters	3	....	2 00 to 2 25	......	
Ore miners and quarrymen	40	....	1 00	......	Work 3 days in a week.
Laborers	29	....	80 to 1 00	......	Work 3 to 5 days in a week
Weighmen	4	....	1 50 to 2 00	......	

Characteristics of Establishment.—The Glendon iron works are situated on the Lehigh river, 2 miles above its mouth, and consist of five (5) blast furnaces for making pig iron; also, a foundry and machine shop for repairs. Only two furnaces were in blast during the greater part of 1875. The anthracite used in the furnaces is purchased. The majority of the iron ore used comes from New Jersey. A majority of the hands employed work by the ton, and others by the day, and I have therefore estimated their average earnings.

W. FIRMSLOWE, *Agent.*

COLERAIN IRON COMPANY, REDINGTON, PA.

Quantity in tons and value in dollars of annual product: 10,000 tons; $200,000.

Whole number of persons employed: 75.

Foundryman 1, $2 per day; keepers 2, $1 58; helpers 2, $1 45; fillers 10, $1 40; guttermen 2, $1 40; cindermen 2, $1 40; engineers 2, $1 40;

blacksmith 1, $2 00 ; helper 1, $1 08 ; carpenters 2, $1 75 ; ore miners 35, $1 to $1 50 ; laborers 15, $1 00 ; boys 2, 50 cents.

Characteristics of the Establishment.—Manufacturers of foundry pig iron, using from two-thirds to three-fourths hematite ores, and balance N. J. magnetic ores. Works owned by W. T. Carter & Co. Two furnaces, when working both, make about 22,000 tons of pig iron, and employ double the number of men. Only ore furnace in blast last year.

COLERAIN IRON CO.

PERRY COUNTY.

DUNCANNON IRON CO., DUNCANNON, PERRY CO.

Furnace out of blast.

Capacity of furnace when in blast from 6 to 7,000 tons pig iron.

W. N. TAYLOR & CO.

No product.

Laura furnace not in operation.

PERRY KREMER, *Assignee.*

MARSHALL IRON CO., NEWPORT, PERRY CO., PA.

Pig iron.

Quantity in tons : made 465 tons pig iron from Jan. 1, 1875, to August 20, 1875. Went out of blast on account of breaking engine.

Whole number of persons employed : 43.

CLASSIFICATION.	No. of men.....	Daily wages paid men..........	Time in operation during year....	REMARKS.
Manager	1	....	$7\frac{2}{3}$ mos.	Went out of blast August 20, 1875.
Foundryman	1	$2 50	....	
Keepers	2	1 75	....	
Do...helpers	2	1 40	....	
Fillers	10	1 15	....	
Guttermen	2	1 40	....	
Cindermen	4	1 15	....	
Engineers	2	1 75	....	
Fireman	1	1 15	....	
Blacksmith	1	1 75	....	
Do.......helper	1	1 25	....	
Carpenter	1	1 75	....	
Laborers	12	1 05	....	
Clerk	1	2 00	....	
Car conductors	2	1 50	....	

W. PRICE DAVIS, *Sec'y and Treas.*

SCHUYLKILL COUNTY.

RINGGOLD IRON AND COAL COMPANY.

New Ringgold, Schuylkill county.

Pig iron.

Quantity in tons and value in dollars of annual product: 7,100; value unknown because of being held from market.

Whole number of persons employed: 31.

CLASSIFICATION.	No. of men.....	Average daily wages paid men..	Time in operation during year....
Manager	1	$5 00	12 mos.
Keepers	2	1 85	....
Do....helpers	4	1 55	....
Fillers	6	1 40	....
Stockers	4	1 25	....
Cindermen	4	1 40	....
Engineers	2	1 80	....
Blacksmith	1	2 25	....
Carpenter	1	1 75	....
Laborers	4	1 12	....
Weighmen	2	1 50	....

Characteristics of Establishment.—The furnace is of the kind known as the cupola style, 14 feet bosh, 52 feet high, working with anthracite coal.

E. HARRIS, *Supt.*

ATKINS BROS., PIONEER FURNACES, POTTSVILLE.

Manufactures pig iron.

Quantity in tons and value in dollars of annual product: 13,945 gross tons; value $275,000.

Whole number of persons employed: 36.

Remarks. — This establishment consists of three blast furnaces, with a yearly capacity of 25,000 tons. Owing to the depression of the iron business, we have only had one stack in blast during the whole year, and one four months; at present only one stack is blowing, and the men employed are for that one only; in running full we should employ, say 120 men and boys.

ATKINS BROS.,
Per M. ATKINS.

TIOGA COUNTY.

TIOGA IRON WORKS.

Mansfield, Tioga county, Pa.

Manufacturers of pig iron.

W. Hayes Grier, Esq.:

Dear Sir:—We are not running our works; have been out of blast since September, 1873, therefore we have no report to make. We are not employing any men, neither are we manufacturing any iron.

Truly yours,

J. M. PHELPS, *Supt.*,
For Shaaber, Johnston & Co.

WESTMORELAND COUNTY.

EVERSON, KNAP & CO.

Charlotte furnace, Scottdale, Westmoreland co., Pa.

Pig iron.

Quantity in tons and value in dollars of annual product: 14,000 net tons, about $280,000.

Whole number of persons employed: About 120.

CLASSIFICATION.	No. of men	Daily wages paid men	Time in operation during year	REMARKS.
Manager	1	$6 00	11 mos.	
Keepers	2	2 37		
Do....helpers	4	1 75		
Fillers	16	1 80		
Help fillers and ore breakers	2	1 35		
Stockhouse bosses	2	1 75		
Cindermen	4	1 35		
Engineers	3	2 25		
Firemen and brakeman	1	1 50		
Blacksmith	1	2 00		
Do........helper	1	1 75		
Carpenter	1	2 00		
Ore miners	50	....	....	Mine by the ton—average about $2 per day.
Laborers	8	1 25 to 1 35		
Weighmaster	1	2 50		
Metal carriers	3	2 50		
Clerks	2	....		
Coke drawers, haulers, &c.	12	1 60 } average		
Laborers at ore mines	5	1 35		
Manager at ore mines	1	3 00		

Average daily wages, about $1 75.

Characteristics of Establishment.—Furnace is modern coke furnace, 16 feet diameter by 65 feet high. Location at junction of South-West Pennsylvania railroad and Mt. Pleasant branch of Connellsville railroad. Coke and stone obtained in immediate vicinity. Ore mined in Chestnut Ridge, 6 miles distant, accessible by narrow gauge railroad.

Product principally grey forge metal, about one-third consumed at adjoining rolling mill; balance finds market in Pittsburgh, 48 miles distant; furnace built in 1873.

EVERSON, KNAP & CO

YORK COUNTY.

WRIGHTSVILLE IRON CO., WRIGHTSVILLE, YORK CO.

Pig iron.

Quantity in tons and value in dollars of annual product: 3,757 tons; value, $80, 654.

Whole number of persons employed: 48.

Manager 1, $3 84; foundryman 1, $2 88; keepers 2, $1 20; helpers 4, $1 10; fillers 2, $1 10; gutterman 1, $1 10; stockers 6, $1 10; cindermen 3, $1 10; engineers 2, $1 50; blacksmith 1, $1 20; carpenter 1, $1 20; ore miners 15, $1 00; laborers 5, $1 00; weighman 1, $1 10.

In operation 9 months in 1875.

Blowed out January 28, 1876.

Average time worked during the year 9 months.

M'CONKEY, *G. M.*

MANUFACTURES—BLAST FURNACES.

NAME OF FURNACE.	Manager	Average daily wages,	Foundrymen	Average daily wages,	Keepers	Average daily wages,	Helpers	Average daily wages,	Fillers	Average daily wages,	Guttermen	Average daily wages,
Allegheny county—												
Eliza Furnaces	1		1		4	$2 25	4	$1 80	29	$1 60		$1 60
Lucy	1	$4 00	1	$2 50	2	2 25	4	1 70	4	1 60		
Shœnberger, Blair & Co			1	4 00	4	2 25	4	1 75	4	1 85	2	1 60
Berks county—												
Topton Furnace			1	3 30	2	1 80	4	1 65	8	1 55		
Clymer Iron Co					2	1 25			2	90	1	1 00
Monocacy Furnace	1		1	2 00	2	1 50	3	1 40	8	1 20 to 1 25		
Robesonia Furnace	2	11 25		2 33	2	1 75	3	1 40	8	1 40	2	12 c. per ton.
E. & G. Brooke	1	3 00	1	2 50	2	1 80	4	1 50	10	1 40	2	1 20
Bedford county—												
Lowry, Eichelberger & Sons,	1	2 00	1	2 00	2	1 20			2	1 10	1	1 10
Blair county—												
Blair Iron and Coal Co			1	3 00								
Blair Iron and Coal Co			1	3 00								
Blair Iron and Coal Co	2	2 25	1	3 00								
....												
S. C. Baker	1	2 33			2	1 35	2	1 10	4	1 20	2	1 25
John Royer	1		1	2 00	2				2	1 00	2	1 50
Cambria county—												
Cambria Iron Co	2	2 00 to 10 00	1	2 25	6	1 70	24	1 40	16	1 40		
Centre county—												
Roland—C. Curtin & Co	1		1	50 c. per ton.	2	25 c. per ton.			2	25 c. per ton.	1	25 c. per ton.

Clarion county—												
Reynolds & Moorhead	1	5 00	1	4 00	2	1 65	2	1 40	6	1 40	3	1 65
Cumberland county—												
C. W. & D. V. Ahl	1	3 12	1	1 75	2	1 20	...	...	2	1 20	2	1 00
Columbia county—												
Bloomsburg Iron Co	1	...	1	...	2	1 50	2	1 14	6	1 14	...	...
*Wm. Neal & Sons	1	...	1	3 00	2	1 50	2	1 14	8	1 14	2	1 14
Dauphin county—												
J. & J. Wister	1	...	1	2 74	2	1 54	2	1 30	10	1 22	4	1 22
M'Cormick & Co.	1	...	1	...	8	1 66	8	1 44	4	1 35	4	1 35
Pennsylvania Steel Co.	...	...	1	...	4	1 62	8	1 32	24	1 25	...	...
Franklin county—												
Hunter & Springer	1	1 67	1	1 66	2	1 00	...	...	2	80	1	80
Mont Alto Iron Co.	1	...	1	1 66	2	1 25	2	1 15	3	1 15	2	1 15
Carrick	1	2 20	1	1 66	1	1 00	1	1 00	2	1 13	1	1 13
Lancaster county—												
Chickies Furnace	1	...	2	2 00	4	1 45	4	1 35	14	1 25	1	1 25
Ethelbert Watts	2	Paid per mo.	1	Paid per mo.	2	1 50	2	1 30	8	1 20	1	1 25
Lawrence county—												
Rosena Furnace	1	6 50	1	3 00	2	2 00	4	1 75	8	1 75	4	1 90
Wampum Furnace	...	...	1	5 00	2	2 22	2	1 87	6	1 87	...	...
Little Pet	...	...	1	3 00	2	1 80	2	1 62	3	1 62	2	1 75
Neshannock Iron Co	1	7 00	1	3 00	2	2 00	2	1 75	8	1 75	...	...
Lebanon county—												
Heirs of R. W. Coleman	...	...	1	3 43	4	1 75	4	1 40	12	1 40	...	...
Heirs of Donaghmore	1	...	1	2 75	2	1 75	2	1 40	6	1 40	...	...
North Cornwall	2	...	1	3 50	2	1 60	2	1 30	6	1 35	2	1 25
Lebanon Valley	1	3 00	1	3 00	2	1 40	2	1 15	6	1 05	2	1 25
Kauffman & Co	...	...	...	...	...	...	...	...	...	...	...	...
Lehigh county—												
† Thomas Iron Co	2	...	3	2 68	8	2 00	16	1 85	32	1 75	...	...
Lehigh Valley Iron Co	1	...	2	2 29	6	1 43	6	1 26	24	1 26	12	1 26

MANUFACTURES—BLAST FURNACES—CONTINUED.

NAME OF FURNACE.	Manager	Average daily wages,	Foundrymen	Average daily wages,	Keepers	Average daily wages,	Helpers	Average daily wages,	Fillers	Average daily wages,	Gutterman	Average daily wages,
Mercer county—												
Westerman Iron Co	1	$4 80	1	$2 00	4	$1 70	4	$1 60	14	$1 65	....	...
Spearman Iron Co	1	...	1	3 00	2	1 75	2	1 50	8	1 50	3	$1 50
Stewart Iron Works	1	...	1	...	2	2 00	2	1 75	6	1 75	....	...
Mifflin county—												
Logan Iron and Steel Co	1	2 50	1	2 50	1	1 25	...	......	2	1 25	1	1 25
Montgomery county—												
Montgomery Iron Co	1	...	1	2 00	2	1 75	2	1 60	8	1 60	....	...
Pottstown Iron Co	....	...	1	5 50	1	2 22	2	1 50	4	1 35	4	1 50
James Lannigan	1	4 00	1	2 50	4	1 70	4	1 50	8	1 50	4	1 50
Edge Hill Iron Co	1	4 10	1	4 11	2	1 90	4	1 75	8	1 75	2	1 65
D. O. & H. S. Hitner	1	2 75	....	...	4	2 00	4	1 60	10	1 60	....	...
Montour county—												
Waterman & Beaver	....	...	....	...	....	...	6	1 09	22	1 09	6	1 09
Grove Brothers	....	...	1	2 17	6	1 50	4	1 00	14	1 00	....	...
			1	...	4	1 50						
Northampton county—												
Coleraine Iron Co	....	...	1	2 00	2	1 58	2	1 45	10	1 40	2	1 40
Glendon Iron Co	....	...	29	1 00 to 2 25	49	keepers helpers	etc.	from	....	...	....	1 00 to 2 00
Perry county—												
Marshall Iron Co	1	...	1	2 50	2	1 75	2	1 40	10	1 75	2	1 40
Schuylkill county—												
Ringgold Iron Co	1	5 00	....	...	2	1 85	4	1 55	6	1 40	....	...
Atkins Bros., Pioneer Furnace	....	...	....	...	....	...	....	...	....	...	....	...

Westmoreland county— Charlotte—Everson, Knap & Co.	1	6 00	....	....	2	2 37	4	1 75	16	1 80	2	1 35
York county— Wrightsville Iron Co.	1	3 84	1	2 88	2	1 20	4	1 10	2	1 10	1	1 10

* Estimated by Bureau.

† Of 8 furnaces only four in blast.

MANUFACTURES—BLAST FURNACES—Continued.

NAME OF FURNACE.	Stockers	Average daily wages	Cindermen	Average daily wages	Engineers	Average daily wages	Firemen	Average daily wages	Blacksmiths	Average daily wages	Blacksmiths' helpers,	Average daily wages
Allegheny county—												
Eliza Furnaces	......	$1 60	5	$1 60	5	$2 25	2	$1 60	2	$2 10	2	$1 60
Lucy	......	......	6	1 40	2	2 00	2	1 50	1	2 25	1	1 35
Shoenberger, Blair & Co	8	1 75	4	1 60	2	2 00	2	1 50	2	1 80	......	......
Berks county—												
Topton Furnace	......	......	8	1 55	3	1 88	......	......	1	1 70	......	......
Clymer Iron Company	2	80	......	......	......	......	......	......	1	1 25	......	......
Monocacy Furnace	......	......	4	1 30	2	1 75	1	1 20	1	1 50	......	......
Robesonia Furnace	......	......	4	1 40	2	1 88	......	......	1	1 75	......	......
E. & G. Brooke	4	1 00	3	1 20	2	2 40	......	......	1	1 20	1	90
Bedford county—												
Lowry, Eichelberger & Sons	1	1 10	......	......	......	......	......	......	1	2 00	......	......
Blair county—												
Blair Iron and Coal Company	......	......	......	......	......	......	......	......	1	1 90	......	......
Blair Iron and Coal Company	......	......	......	......	......	......	......	......	1	2 55	......	......
Blair Iron and Coal Company	......	......	......	......	......	......	......	......	1	2 00	......	......
....	......	......	......	......	......	......	......	......	1	2 55	......	......
S. C. Baker	3	1 00	......	......	2	1 45	......	......	1	2 50	1	2 50
John Royer	1	1 00	......	......	......	......	......	......	1	1 50	2	1 00
Cambria county—												
Cambria Iron Company	14	1 40	6	1 40	5	1 75	4	1 25	1	1 50	1	1 05
Centre county—												
Roland—C. Curtin & Co.	4	40c pr t	......	......	2	2 00	1	1 00	2	1 53	......	......

Clarion county—												
Reynolds & Moorhead	7	1 25	......	......	2	2 10	2	85	1	2 25	......	......
Cumberland county—												
C. W. & D. V. Ahl	2	1 00	......	......	......	......	......	......	2	1 15	......	......
Columbia county—												
Bloomsburg Iron Company	......	......	6	1 14	2	1 62	......	......	1	1 75	1	1 25
Wm. Neal & Sons	2	1 00	4	1 14	2	1 62	2	1 50	1	1 75	1	1 25
Dauphin county—												
J. & J. Wister	......	......	......	......	2	1 87	......	......	1	1 83	......	......
M'Cormick & Co.	12	1 35	8	1 44	4	1 80	......	......	2	2 25	2	1 25
Pennsylvania Steel Company	......	......	14	1 32	4	1 62	......	......	1	1 62	......	......
Franklin county—												
Hunter & Springer	1	80	......	......	......	......	......	......	1	1 25	......	......
Mont Alto Iron Company	3	1 15	......	......	5	1 28	......	......	3	2 02	3	1 25
Carrick	5	1 15	1	1 05	......	......	......	......	1	1 75	1	1 25
Lancaster county—												
Chickies Furnace	2	1 15	4	1 25	4	1 25	......	......	1	1 60	1	1 30
Ethelbert Watts	1	1 00	2	1 25	2	1 38	......	......	1	1 50	1	1 00
Lawrence county—												
Rosena Furnace	8	1 75	12	1 87	2	3 00	3	1 50	1	3 00	1	2 00
Wampum Furnace	4	1 25	2	1 45	2	2 25	......	......	1	2 00	......	......
Little Pet	3	1 62	2	1 87	2	2 50	2	1 35	1	2 25	......	......
Neshannock Iron Company	......	......	2	1 75	2	2 12	......	......	1	1 75	......	......
Lebanon county—												
Heirs of R. W. Coleman	1	1 10	4	1 40	2	1 87	......	......	1	2 30	1	1 60
Heirs of R. W. Coleman, (Donaghmore)	......	......	2	1 40	2	1 63	......	......	1	1 50	......	......
North Cornwall	1	1 00	2	1 00	2	1 70	......	......	1	1 75	......	......
Lebanon Valley	1	2 00	......	......	2	1 20	......	......	......	......	......	......
Kauffman & Co.	......	......	......	......	......	......	......	......	......	......	......	......
Lehigh county—												
Thomas Iron Company	8	1 75	6	1 65	11	2 00	6	1 45	3	2 00	3	1 25
Lehigh Valley Iron Company	3	95	6	1 12	9	1 40	3	1 12	2	1 62	1	95

MANUFACTURES—BLAST FURNACES—CONTINUED.

NAME OF FURNACE.	Stockers	Average daily wages,	Cindermen	Average daily wages,	Engineers	Average daily wages,	Firemen	Average daily wages,	Blacksmiths	Average daily wages,	Blacksmiths' helpers	Average daily wages,
Mercer county—												
Westerman Iron Company	2	$1 38	2	$2 25	4	$2 06	2	$1 50	2	$2 25	1	$1 25
Spearman Iron Company	.....	....	1	1 75	2	2 50	2	1 50	1	2 00	.....	....
Stewart Iron Works	.....	....	.....	....	2	2 25	.....	....	5	2 00	1	1 25
Mifflin county—												
Logan Iron and Steel Company	2	1 25	1	1 22	2	1 80	.....	....	2	1 64	1	1 00
Montgomery county—												
Montgomery Iron Company	.....	....	4	1 60	2	2 10	.....	....	.....	....	.....	....
Pottstown Iron Company	2	1 35	.....	....	2	1 86	.....	....	1	1 40	.....	....
James Lannigan	3	1 25	2	1 50	4	1 75	.....	....	1	2 00	1	1 25
Edge Hill Iron Company	2	1 50	4	1 65	2	2 25	1	1 25	1	2 25	1	1 25
D. O. & H. S. Hitner	.....	....	8	1 60	4	2 00	.....	....	2	1 50	.....	....
Montour county—												
Waterman & Beaver	.....	....	3	97	5	1 50	3	1 09	1	1 39	1	97
Grove Brothers	3	1 00	8	1 00	2	1 50	2	95	1	1 38	1	95
Northampton county—												
Coleraine Iron Company	.....	....	2	1 40	2	1 40	.....	....	1	2 00	1	1 08
Glendon Iron Company	.....	....	.....	....	4	1 75	2	1 00	3	1 75	3	1 12
Perry county—												
Marshall Iron Company	.....	....	4	1 15	2	1 75	1	1 15	1	1 75	1	1 25
Schuylkill county—												
Ringgold Iron Company	4	1 25	4	1 40	2	1 80	.....	....	1	2 25	.....	....
Atkins Bros. Pioneer Furnace	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....

Westmoreland county—												
Charlotte—Everson, Knap & Co.	1	1 75	4	1 35	3	2 25	1	1 50	1	2 00	1	1 75
York county—												
Wrightsville Iron Company	6	1 10	3	1 10	2	1 50	......	....	1	1 10	......	....

MANUFACTURES—BLAST FURNACES—CONTINUED.

NAME OF FURNACE.	Carpenters	Average daily wages	Ore miners	Average daily wages	Laborers	Average daily wages	No. of boys	Average daily wages	Weighmen	Average daily wages
Allegheny county—										
Eliza Furnaces	2	$ 2 05	.....	.....	57	$1 18	6	$0 66	2	$1 60
Lucy	1	2 25	.....	.....	30	1 35	3	90	2	1 50
Shoenberger, Blair & Co.	1	1 80	.....	.....	31	1 35	.....	.....	.....	.....
Berks county—										
Topton Furnace	1	1 70	.....	.....	10	1 10	.....	.....	2	1 50
Clymer Iron Co	1	1 37	12	$0 90	.....	.....	2	70	.....	.....
Monocacy Furnace	1	2 00	.....	.....	20 to 25	90 to 1 10	.....	.....	2	1 25
Robesonia Furnace	2	2 00	14	1 30	18	1 15	3	40	.....	.....
E. & G. Brooke	1	1 75	70	1 00	4	90	.....	.....	2	1 30
Bedford county—										
Lowry, Eichelberger & Sons	.....	.....	17	1 10 to 1 25	5	1 10	5	50	.....	.....
Blair county—										
Blair Iron and Coal Co	1	1 65	.....	.....	16	1 20	.....	.....	.....	.....
Blair Iron and Coal Co	1	2 40	.....	.....	13	1 00	.....	.....	.....	.....
Blair Iron and Coal Co	1	1 25	.....	.....	11	1 00	.....	.....	.....	.....
.....	1	2 40	4	1 25	19	1 00	.....	.....	.....	.....
S. C. Baker	2	1 25	4	1 00	3	1 00	1	40	.....	.....
John Royer	1	1 50	12	1 00	25	90	11	60	.....	.....
Cambria county—										
Cambria Iron Co	1	1 40	180	1 62	4	1 05	.....	.....	1	2 00
Centre county—										
Roland—C. Curtin & Co	3	1 75	37	1 12	2	1 12	11	75	.....	.....

Clarion county—										
Reynolds & Moorhead	1	2 75	100	1 25	12	1 25			1	1 75
Cumberland county—										
C. W. & D. V. Ahl	2	1 10	15	90	10	90			2	90
Columbia county—										
Bloomsburg Iron Co	2	2 25	87	1 33	13	1 10	15	65	2	1 14
Wm. Neal & Sons	1	2 25	160	1 33	12	1 10			1	1 14
Dauphin county—										
J. & J. Wister	1	1 83			6	1 10			1	1 31
M'Cormick & Co	2	2 25	25	1 25	15	1 25				
Penna Steel Co					114	1 00				
Franklin county—										
Hunter & Springer	1	1 50	12	80	3	90				
Mont Alto Iron Co	8	1 43	60	90	35	70	18	50	1	1 16
Carrick	1	1 25	8	90	2	1 00	4	90	1	1 00
Lancaster county—										
Chickies Furnace	1	1 87			3	1 15	17	95		
Ethelbert Watts	1	1 50								
Lawrence county—										
Rosena Furnace	1	3 25			4	1 25			1	1 50
Wampum Furnace					14	1 25				
Little Pet	1	3 00			5	1 35			1	1 50
Neshannock Iron Co					6	1 40				
Lebanon county—										
Heirs of R. M. Coleman	2	2 23			9	1 10	6	70	2	1 50
Heirs of Donaghmore	1	1 60			6	1 10	3	75	1	1 50
North Cornwall	1	1 75			3	1 00			1	1 50
Lebanon Valley			10	1 00	2	1 00				
Kauffman & Co										
Lehigh county—										
Thomas Iron Co	6	1 25 to 2 10			55	1 05			3	2 20
Lehigh Valley Iron Co	3	1 75			26	95			1	1 25

MANUFACTURES—BLAST FURNACES—CONTINUED.

NAME OF FURNACE.	Carpenters	Av'ge daily wages	Ore miners	Av'ge daily wages	Laborers	Av'ge daily wages	No. of boys	Av'ge daily wages	Weighmen	Av'ge daily wages
Mercer county—										
Westerman Iron Co	....	....	....	....	15	$1 25	....	....	2	$2 50
Spearman Iron Co.	1	$2 00	....	....	6	1 25	....	....	....	....
Stewart Iron Works	1	2 00	....	....	11	1 25	....	....	....	....
Mifflin county—										
Logan Iron and Steel Co	2	1 40	11	$1 25	2	1 00	6	$0 68 to 1 00	....	....
Montgomery county—										
Montgomery Iron Co	....	....	....	....	11	1 25	....	....	1	2 00
Pottstown Iron Co.	1	1 50	11	1 50	11	1 15	3	65	....	....
James Lannigan	1	1 75	107	1 15	5	1 00	1	75	1	75
Edge Hill Iron Co.	2	2 25	10	1 75	20	1 25	....	....	2	1 60
D. O. & H. S. Hitner	....	....	....	....	10	1 50	....	....	2	2 09
Montour county—										
Waterman & Beaver	....	....	1 38	1 33	28	97	2	52	1	1 53
Grove Brothers	2	1 75	51	1 33	11	95	....	....	1	1 60
Northampton county—										
Coleraine Iron Co	2	1 75	35	1 25	15	1 09	2	50	....	....
Glendon Iron Co	3	2 12	40	1 00	29	90	4	80	4	1 75
Perry county—										
Marshall Iron Co	1	1 75	....	....	12	1 05	....	....	....	....
Schuylkill county—										
Ringgold Iron Co.	1	1 75	....	....	4	1 12	....	....	2	1 50
Atkins' Bros. Pioneer Furnace	....	....	....	....	....	....	....	....	....	....

Westmoreland county—										
Charlotte—Everson, Knap & Co.	1	2 00	50	2 00	8	1 30	....	....	1	2 50
York county—										
Wrightsville Iron Co.	1	1 20	15	1 00	5	1 00	....	....	1	1 10

MANUFACTURES—BLAST FURNACES—Continued.

NAME OF FURNACE.	Remarks.	Average time in operation during year.	Production—tons	Value.	POST OFFICE ADDRESS.
Allegheny county—					
Eliza Furnaces		365	28,000	$558,000	Laughlin & Co., Pittsburgh.
Lucy		365	25,000	625,000	Carnegie Bros. & Co., Pittsburgh.
Shoenberger, Blair & Co		183	15,795	310,385	Shoenberger, Blair & Co, Pittsb'gh.
Berks county—					
Topton Furnace			1,290	25,000	B. Pott, Topton, Pa.
Clymer Iron Furnace			625	21,000	Clymer Iron Co., Temple.
Monocacy Furnace		325	8,000	160,000 to 300,000	Monocacy Furnace Co., Monocacy station.
Robesonia Furnace		216	4,662	102,564	Robesonia Furnace P. O.
E. & G. Brooke		140	4,478	94,048	Birdsboro'.
Bedford county—					
Lowry, Eichelberger & Sons		365	632	18,960	Hopewell, Pa.
Blair county—					
Blair Iron and Coal Co	45 furnace men at $1 30		5,767	173,025	Hollidaysburg.
Do.......do	21.......do....... 1 21		2,572	56,593	"
Do.......do	36.......do....... 1 27		4,445	104,757	"
	25.......do....... 1 27		6,358	140,481	"
S. C. Baker		53	400		Altoona.
John Royer		250		52,000	Royer P. O.
Cambria county—					
Cambria Iron Co		250	25,477	600,000	Johnstown.
Centre county—					
Roland—C. Curtin & Co.		250	1,800		Roland P. O.
Clarion county—					
Reynolds & Moorehead	50 coal miners at $1 25	313	6,000	120,000	Red Bank.

Cumberland county—					
C. W. & D. V. Ahl	110 wood choppers, 10c per cord.	250	1,800		Carlisle.
Columbia county—					
Bloomsburg Iron Co		365	5,820	116,400	Bloomsburg.
Wm. Neal & Sons		365	8,217	165,000	"
Dauphin county—					
J. & J. Wister		365	7,139	169,589	Harrisburg.
M'Cormick & Co		165	3,980	91,540	"
Pennsylvania Steel Co		365	17,026	425,650	Steel Works P. O.
Franklin county—					
Hunter & Springer		240	1,164	39,593	Chambersburg.
Mont Alto Iron Co		365	2,493	69,944	Mont Alto.
Carrick		300	1,200	32,400	Carrick station.
Lancaster county—					
Chickies Furnace		365	11,797	272,758	Chickies.
Ethelbert Watts		365	5,000	*100,000	Marietta.
Lawrence county—					
Rosena Furnace		365	20,219	*400,000	New Castle.
Wampum Furnace		240	4,000	76,000	Wampum.
Little Pet		270	2,796	*55,920	New Castle.
Neshannock Iron Co		365	13,920	382,800	"
Lebanon county—					
Heirs of R. W. Coleman		365	8,615	172,300	Cornwall.
Heirs of Donaghmore		365	4,000	*80,000	Lebanon.
North Cornwall		60			Cornwall.
Lebanon Valley		365	5,000	*100,000	
Kauffman & Co		270	5,181	114,442	Sheridan.
Lehigh county—					
Thomas Iron Co		330	43,295	909,195	Hokendaqua.
Lehigh Valley Iron Co		365	28,000	560,000	Coplay, Pa.
Mercer county—					
Westerman Iron Co		245	13,185	*263,700	Sharon.
Spearman Iron Co		240	7,793	171,546	Sharpsville.
Stewart Iron Works		120	3,554	80,000	Sharon.

* Estimated.

MANUFACTURES—BLAST FURNACES—Continued

NAME OF FURNACE.	Remarks.	Average time in operation during year.	Production—tons	Value...........	POST OFFICE ADDRESS.
Mifflin county—					
Logan Iron and Steel Co		210	1,147	$43,586	Lewistown.
Montgomery county—					
Montgomery Iron Co		365	7,688	177,000	Port Kennedy.
Pottstown Iron Co		180	4,669	*93,380	Pottstown.
James Lannigan		68	2,354	49,680	Swedeland.
Edge Hill Iron Co		186	4,469	111,725	Philadelphia.
D. O. & H. S. Hitner		270	8,087	202,187	Consohocken.
Montour county—					
Waterman & Beaver		93	3,610	61,370	Danville.
Grove Brothers		186	3,775	83,050	"
Northampton county—					
Coleraine Iron Co		365	10,000	200,000	Redington.
Glendon Iron Co		365	27,742	494,840	Easton.
Perry county—					
Marshall Iron Co		237	465	*9,300	Newport.
Schuylkill county—					
Ringgold Iron Co		365	7,100	*142,000	New Ringgold.
Atkins Bros., Pioneer Furnace		365	13,945	275,000	Pottsville.
Westmoreland county—					
Charlotte—Everson, Knap & Co		333	14,000	280,000	Scottdale.
York county—					
Wrightsville Iron Co		273	3,757	82,654	Wrightsville.

*Estimated.

MANUFACTURES—FORGES.

ALLEGHENY COUNTY.

WILSON, WALKER & CO.

Union forge and iron mill, Pittsburgh, Pa.

Quantity in tons and value in dollars of annual product: 2,120 tons, $220,000.

Whole number of persons employed: 51.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Blacksmiths	13	....	$2 40	....	12 months.
Helper	20	....	1 55	....	....do.
Driller	1	1	1 80	$1 40	....do.
Hammerman	2	2	1 75	1 00	....do.
Engineer	1	....	2 00	....	....do.
Foreman	1	....	5 00	....	....do.
Watchman	1	....	1 65	....	....do.
Laborer	3	....	1 50	....	....do.
Heater	3	...	2 00	....	....do.
Pressman	2	2	1 80	75	....do.
Forger	1	....	4 00	....	....do.

Characteristics of Establishment.—One forge and blacksmith shop is mainly employed on railroad work, such as drawheads, axle face and follower plates, miller hooks, buffer and crow equaling bars, links, pins, &c.

During the year we made 410 gang plows for California, and a large number of plow beams for California and Illinois parties.

The number of men given is estimated average, and the pay named is average pay on time work. Nearly all our work is piece work, and blacksmiths earn from $3 to $3 60 per day; helper, $2 10 to $2 40 per day on piece work.

WILSON, WALKER & CO.

BLAIR COUNTY.

COLD SPRING FORGE.

Tyrone, Blair county, Pa.

Not in operation. Idle since January 1, 1873.

Characteristics of Establishment.—3 fires; annual capacity, 550 tons; charcoal principally.

CRYDER & CO., *Owners.*

JOHN ROYER, COVE FORGE.

Manufacturer of No. 1 charcoal blooms, Williamsburg, Blair co., Pa.

Quantity in tons and value in dollars of annual product: Production in 1875, 320 tons, value $22,400.

Whole number of persons employed: 37.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men..............	Daily wages paid boys.............	Time in operation during year.....	REMARKS.
Manager	1		$2 50		12 mos.	Runoutmen are paid by the tons of blooms made—runoutmen, $1 50 per ton; helper, $1 00 per ton. Forgemen are paid $6 50 per ton for making blooms, and will earn more per day when doing full work. Wood for coaling is chopped during the winter at from 35 cents to 45 cents per cord. Of the number of men employed 17 have families who are each furnished with a dwelling house and lot of ground free of rent charge.
Clerk	1		1 25		"	
Runoutman	1		2 00		9 mos.	
Helper..........	1		1 33		"	
Forgemen	6		1 75		"	
Coal stocker......	1		1 27		12 mos.	
Teamsters	3		1 22		"	
Blacksmith......	1		1 92		"	
Carpenter........	1		1 25		"	
Collier...........	1		1 73		6 mos.	
Helpers..........	2		1 15		"	
Laborers.........	4		1 05		12 mos.	
Boys.............		6		$0 65	9 mos.	
Woodchoppers...	8					

JOHN ROYER.

CENTRE COUNTY.

CONSTANS CURTIN & CO.

Roland P. O., Centre county, Pa.

Cold blast charcoal blooms.

Quantity in tons and value in dollars of annual product: 1,100 tons, of 2,000 pounds; average price, $70 per ton, $77,000.

Whole number of persons employed: 21.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men..............	Daily wages paid boys.............	Time in operation during year.....	REMARKS.
Shingler.........	1		*80		11 mos.	Could work all year were it not for freezing up of the water wheels.
Do.... helper..		1		*25	"	
Two full fires....	2		*$6 00		"	
Do.... helpers,		2		*$1 00	"	
Six fires, equal ..	12		*3 50		"	
Stocker and boy,	1	1	*80		"	
Hampell cleaner,		1		†50	"	

* Per ton. † Per day.

Characteristics of Establishment.—The Eagle forge was built by Roland Curtin in 1809; first used small hammers and drew iron under them for markets of Pittsburgh, Philadelphia and Baltimore, until about 25 years ago put in the large hammers, which are now in use. Our specialty is soft neutral cold blast charcoal blooms, suitable for rivets, sheet iron, boiler plates and wire. The works are situated on the bank of Bald Eagle creek, six miles north-east from Bellefonte, the county town of Centre county. The water power is supplied from said creek. The furnace from which the supply of pig metal is had for forge is situated within four hundred feet of the forge, and the power comes from same head race.

C. CURTIN & CO.

COLUMBIA COUNTY.

C. E. PENNOCK & CO.

Mainville forge, Mainville P. O., Columbia county, Pa.

Quantity in tons and value in dollars of annual product: 5,918 blooms, weighing 634½ tons of 2,240 pounds, valued at $60 per ton, $38,070.

Whole number of persons employed: 27.

CLASSIFICATION.	No. of men	Daily wages paid men	Time in operation during year	REMARKS.
Superintendents	1	$2 56	All the year	$800 00 per year.
Runoutman	1	2 50	270 days	1 00 per ton.
Do helper	1	1 20	270 days	25 per cast.
Forgemen	6	2 00	270 days	5 00 per ton to 2 men.
Teamsters	2	1 10	All the year.	
Laborer	1	1 00	150 days.	
Woodchoppers	10	1 00	200 days	40 per cord.
Colliers	5	1 25	200 days	2 per bushel.

Characteristics of Establishment.—Mainville forge is situated on Catawissa creek, about 6 miles from where it empties into the North Branch of the Susquehanna. It is an old building, rather small, built in 1824; has good water power. Cast iron Tyler wheels give the power for hammering and blast. Old car wheels were used to make the aforesaid blooms, which were got from the Reading railroad company. Facilities for getting charcoal are good, plenty of timber handy.

F. E. BENTZ, *Supt.*

CUMBERLAND COUNTY.

C. W. & D. V. AHL, CARLISLE, CUMBERLAND COUNTY.

Charcoal blooms.

Whole number of persons employed: 12.

Men, 12; wages paid, $5 per ton; in operation, 12 months.

Remarks.—The business of the firm is making neutral charcoal blooms. They have 5 fires which make 5 tons per day. They make their own pig iron from their own ores.

C. W. AHL, *General Manager.*

MUMMA & BOYER, LISBURN, PA.

Product—Blooms and wire billets. Works idle.

FRANKLIN COUNTY.

MONT ALTO IRON COMPANY.

Mont Alto, Franklin county, Pa.

Blooms.

Quantity in tons and value in dollars of annual product: 1,091 tons of 2,240 lbs.; $59,456 56.

Whole number of persons employed: 18.

Runoutmen 2, $2 50 per day; helpers 2, $1 25; forgemen 12, $2 50; hammerman 1, $1 65; bankman 1, $1 50; time in operation, 260 days.

Characteristics of Establishment.—[See note—Mont Alto blast furnace.]

GEO. B. WEISTLING, *Supt.*

ERIE COUNTY.

ERIE FORGE CO., ERIE, PA.

Hammered iron, engine cranks, car axles, shafting and other forgings.

Quantity in tons and value in dollars of 8 months' product: 268 net tons; $17,680.

Whole number of persons employed: 14. Wages not given.

HUNTINGDON COUNTY.

S. & B. R. HATFIELD, JUNIATA CO.

Alexander postoffice, Huntingdon co., Pa.

Quantity in tons and value in dollars of annual product: 250 tons charcoal blooms; value, $18,270.

Whole number of persons employed: 13.

CLASSIFICATION.	No. of men..........	Daily wages paid men............	Time in operation during year .....
Forgemen	2	$3 00	6 months.
Puddlers	2	2 50	....
Stockers	2	1 00	....
Hammerman	1	1 00	....
Wagoners	2	1 00	....
Blacksmith	1	1 25	....
Clerk	1	1 00	....
Runoutmen	2	2 50	....

Forgemen are paid $6 per ton, puddlers $5 per ton.

Remarks.—By the abandonment of the Pennsylvania canal, on which these works are located, in September 1874, cutting off our transportation, we were compelled to work up our stock and cease operations, consequently our establishment was only six months in operation during the year 1875. The works comprise 4 fires, charcoal forge, 1 4 Lucy red run-out fire and 3 single puddling furnaces.

S. & B. R. HATFIELD.

LEBANON COUNTY.

VAN DE SANDE & CAPP, LEBANON.

Bar iron.

Quantity of tons and value in dollars of annual product: 688 tons; $43,105.

Whole number of persons employed: 17.

Engineer 1, $1 75 per day; roller 1, $5 00; heater 1, $3 50, helper 1, $1 50; roughers 2, $2 00; catcher 1, $1 00; hook-up 1, $0 50; straighteners 2, $1 00; blacksmith 1, $1 50; watchman 1, $1 25; laborers 5, $1 00. In operation 177 days.

Characteristics of Establishment.—Bar and guide mill.

VAN DE SANDE & CAPP.

PERRY COUNTY.

WM. M'ILVAINE & SONS, COVE FORGE, DUNCANNON, PA.

Manufacture charcoal blooms.

Quantity in tons and value in dollars of annual product: 659,966 lbs.= $329\frac{1966}{2000}$ net tons; value $18,297 80.

Whole number of persons employed last year: 21.

Refineryman 1, $4 per day; helper 1, $1 90; finerymen 6, $2; hammerman 1, $2 50; engineer 1, $1 50; stocker 1, $1 50; teamster 1, $1 40; blacksmith 1, $1 75; carpenter 1, $1 50; colliers 2, $2; out hands 4, $1 20; manager 1, $2 75; time in operation 128 days.

We run but three fires last year, and they not half time, and have up to this date done very little this year, and the prospects still very unfavorable for brighter times. The operatives are not charged rent for the houses they occupy.

Characteristics of Establishment.—Our forge contains 5 finery and one 4 tuyere refinery fire, and can turn out, when running full time, from ten to twelve hundred tons of 2,464 lbs. per year. The blast is worked by water power, and the hammer is run by steam. When running full time, we employ double the number of men.

SCHUYLKILL COUNTY.

JOHN B. SEIDEL & SONS, ELLWOOD, SCHUYLKILL CO.

Charcoal blooms.

Quantity of tons and value in dollars of annual product: 320 tons of 2,464 pounds: $21,500.

Whole number of persons employed: 18 to 25.

CLASSIFICATION.	No. of men.......	Daily wages paid men.	Time in operation during year.....	REMARKS.
Forgemen..............	4	$2 25 per ton of 2,464 lbs.	9 mos. with 2 fires.	The master collier employs a wood hauler to sled the cord wood into hearth, and two under hands to assist him, and deliver the coal on hearth which we haul.
Coal stocker...........	1	1 20 per diem.		
Runoutman............	1	1 00 per ton of 2,240 lbs.		
Runout helper.........	1	35......do......do.		
Teamster..	1	30 00 per month.		
Blacksmith............	1	1 40 per diem.		
Blacksmith's helper...	1	1 20....do.		
Laborers, &c...........	3	1 20....do.		
*Wood choppers.......	....	50 per cord.		
Master collier..........	1	85....do.		

* Number varies.

Characteristics of Establishment.—Ellwood forge was built in 1863 by Dr. Geo. N. Eckert. It is situated in Schuylkill county, on the north side of Swatara valley, in a gap of the Second mountain, on the line of the Schuylkil and Susquehanna railroad, and 1¼ miles from Mifflin station, on the Lebanon and Tremont railroad. It is worked by the water power of Fishing creek, a tributary of the Swatara, with four fires for the manufacture of charcoal blooms, and one double run out fire, or refinery. Owing to the depression of the iron trade, we worked only nine months during 1875, and used but two fires, and did not have orders sufficient to drive them to their full capacity. This accounts for our small product during the year. We have facilities for making 1,000 tons of charcoal blooms of 2,464 lbs. per annum.

JOHN R. SEIDEL & SONS.

REVIEW OF THE EASTERN IRON TRADE FOR 1876

From the *Iron Age,* the best authority in the country, we obtain the following review of the iron trade for 1876 :

The iron trade throughout the year, on the whole, has been quiet and steady, and singularly free from violent fluctuation in values. There has been an entire absence of the speculative element ; business has been of a purely legitimate character, and almost without exception confined to frequent sales of small lots for immediate consumption. The demand for No. 1 foundry iron has been less in proportion than for No. 2 and No. 3 irons, which at times have been quite scarce, and at no time in excessive supply. The general tendency of the market, however, has been to a lower range of prices, and there is not a single instance during the whole year in which it can be said that an advance was obtained. Firmness in prices have occasionally been noted, particularly after a decline, as though the trade had resolved that there should be no further concession. We find, however, a gradual settling down during the year of about $2 50 per ton. Our opening quotation the first week in January was $23 50, from which figure it declined easily to $21, the average quotation of to-day, at which rate the market closes.

The first three months of the year developed an easy market, but it was not until the end of March that a change of quotation was necessary, and that to $23, a decline of only 50c. per ton in three months. Early in April, however, the market began to show further signs of weakness, and by the end of the month the quotation was $22 50, a decline of 50c. per ton during April May opened with a steadier feeling, and although occasional sales were reported at lower prices, the average quotation at the close of the month was still $22 50, as at the opening. In June prices remained steady until about the middle of the month, when a very uneasy feeling was manifested, owing to reports of an unfavorable character in regard to the financial condition of the Reading Coal and Iron Co. It seemed for a while as though a serious break in prices was pending, as it was well known that that company was carrying some 65,000 tons of iron which might at any time be thrown on the market. Their diffiulties, however, so far as the iron was concerned, seem to have been arranged, and as none of it was offered, this disquieting feature was lost sight of, and the month closed without any material change in values.

During July, the Allentown Iron Company put their furnaces out of blast, me prospect of others following their example the market assumed a steadier tone, and until the middle of August, no perceptible change in prices could be noted. Toward the end of the month the market became very much unsettled, owing to the disruption of the coal combination, and although quotations were nominally unchanged, it was well understood that buyers could obtain concessions, and a good many sales were on the basis of four months, without interest. The market continued in this condition throughout September and October, the average price being about $22, but the tendency was still toward lower prices, and to effect sales in quantity a sharp reduction was necessary. November opened with a very uneasy feeling, and although $22 was the nominal quotation, it was a matter of publicity in the trade that one of the leading companies was selling at $21. The difference between $21, prompt cash, however, for round lots, and $22, four months in a retail way, was not a very important one, and although it caused a good deal of talk at the time, the course of trade was not much disturbed by the innovation. About the middle of November, the presidential muddle became an element of uncertainty, and for a time threatened to have a disastrous effect upon the iron interests. There was no material change in values, however, until about the middle of December, when further weakness was noted, and prices had again receded, until $21 became the general quotation, although in special cases higher figures were occasionally realized. From that time the market has continued steady.

Production in 1876 has undoubtedly been less than for the past two or three years, and although there may not have been any important increase in consumption, stocks have been largely drawn upon, and the close of the year, so far as the stock on hand is concerned, will be entirely satisfactory to the trade. With the exception of the Reading Coal and Iron company and the Allentown company's stock, we may say there is very little iron in first hands, and it is generally understood that consumers never carried less than at present.

The stock of iron carried by the Reading Coal and Iron company we know to be under 55,000 tons, and the stock on the Allentown company's furnace banks is estimated at about half that amount, making say, 75,000 to 80,000 tons all told. We have reason to believe, however, that there is a more than usually large quantity of muck bar on hand, which in this connection must be kept in mind. Still, a general improvement in our iron working establishments would doubtless absorb all the stocks of pig iron and muck bar in a very short time, for the reason before stated, that the large majority of both consumers and producers have no supplies to fall back upon. Setting aside the political aspect of the case, the question is,

WHAT ARE THE PROBABILITIES FOR 1877 ?

It would be an agreeable task if we could point out some solid grounds upon which to base predictions of the improvement so long hoped for, but unfortunately there are too many "ifs" involved to make any prediction an entirely safe one. In the prosperous times the demand for iron was chiefly for supplying rails, pipes, plates, heavy machinery, &c., &c. The business in iron rails for the past year or two has been seriously curtailed, first on account of the financial depression, which prevented the further extension of the railway system of the country; and second, by the use of steel instead of iron by all the most prominent railway companies; and, lastly, by the inability of many would-be buyers to offer terms of payment satisfactory to sellers. There is now some signs of a revival in the demand for iron rails, chiefly from the South, and while it may not result in anything like the business of former times, it is one of the main sources from which we shall probably receive the first impulse. The next source of demand will doubtless be for the building and equipment of narrow gauge railways, and we think we are safe in the prediction that with a general restoration of confidence among capitalists, this interest will be one of the first to attract attention. In regard to the demand for pipe, &c., from municipal corporations, we fear that the demand will be seriously curtailed by the stringency of the times and the disinclination of people to authorize avoidable expenditures. For plate iron there is a fair prospect in various directions, and it is tolerably certain that there will be a fair demand, and possibly some activity. A revival in iron shipbuilding seems quite probable; in fact, there are already tangible evidences of improvement, which, if not interrupted by some unforseen circumstance, will quite likely develop into permanent activity. The demand for iron for heavy machinery has been much below an average, and there are no special indications of change in this respect. The stove trade, too, has been unusually dull, and prospects are far from encouraging. In fact, the demand for foundry purposes has been light, and although there is nothing special to warrant anticipations of a great improvement, the tendency is in that direction.

In regard to the cost of pig iron, estimates vary so widely that it is almost impossible to state definitely what the cost actually is. The location of a furnace, its equipment, its management, its financial condition, and other important details, differ so much that estimates necessarily vary. Besides these differences, some companies owning both the furnaces and the ore beds, charge the former for ore at the same rate as when iron was double its present price. They also charge interest upon the same basis. An adjustment of the mineral lands and furnaces to present market value, and estimates of costs based thereon, would doubtless give a very different result.

Upon the basis of Mr. W. E. Baker's statement, published in *The Iron Age* of April 27, the average cost of a furnace bank was shown to be $23 20. After carefully examining the details of cost as there presented, and submitting them to the same authority for revision, we find the cost of production now to be an average of $2 per ton less than on the 1st of March last, while the decline in the price of pig iron during the same period is only $1 50, leaving an apparent difference of 50 cents per ton in favor of the producer. The companies claim that expenditures have been reduced to the lowest limit possible, and that taking wear and tear of the furnaces into account, interest on their investment of capital, and various incidental shrinkages which are inevitable, it is impossible to expect any further reduction in the cost of production. A reduction in the rate of freights, the companies claim, ought to be made, and that appears to be the only point in which a saving could be effected, but the condition of the railway companies gives little hope of concessions from them. Notwithstanding the above estimate, which is generally indorsed as correct, some of the furnaces claim to be able to make a slight profit at present market rates. Perhaps the position would be more correctly stated by saying that they lose less by selling at present rates than by remaining idle.

THE AMERICAN IRON PRODUCT OF 1876.

The bulletin of the American iron and steel association contains the following instructive close approximation of the production of pig iron in 1876 in various portions of the Union, as compared with the known product of the previous year:

PRODUCTION OF PIG IRON IN THE UNITED STATES IN 1875 AND 1876, AND STOCK IN PRODUCERS' HANDS AT THE CLOSE OF EACH YEAR.

STATES AND DISTRICTS.	PRODUCTION—NET TONS.		STOCK ON HAND DEC. 31.—NET TONS.	
	Exact figures. 1875.	Estimated. 1876.	Exact figures. 1875.	Estimated. 1876.
New England	36,581	18,000	35,604	25,000
New York	266,431	181,000	88,903	67,000
New Jersey	64,069	31,000	26,095	5,000
Pennsylvania	960,884	989,000	246,908	275,000
Maryland	38,741	20,000	13,767	4,000
Virginia	29,985	6,000	9,749	4,000
North Carolina	800	....	....	....
Georgia	16,508	15,000	3,400	3,000
Alabama and Texas	25,108	29,000	20,921	20,000
West Virginia	25,277	45,000	3,400	5,000
Kentucky	48,339	35,000	27,590	15,000
Tennessee	28,311	27,000	19,599	10,000
Ohio	415,893	383,000	128,033	124,000
Michigan	114,805	84,000	52,167	31,000
Indiana	22,081	13,000	6,381	2,000
Illinois	49,762	53,000	5,816	10,000
Wisconsin	62,139	51,000	10,392	5,000
Missouri	59,717	69,000	61,769	55,000
Pacific States and Territories	1,150	1,000	454	....
Total	2,266,581	2,050,000	760,908	660,000
PENNSYLVANIA AND OHIO BY DISTRICTS.				
Pennsylvania:				
Lehigh valley	280,360	260,000	50,878	43,000
Schuylkill valley	123,184	129,000	79,155	114,000
Upper Susquehanna	71,731	77,000	13,980	29,000
Lower Susquehanna	79,717	101,000	19,163	19,000
Shenango valley	137,025	150,000	35,097	30,000
Allegheny county	131,856	135,000	4,920	2,000
Miscellaneous bituminous	102,520	120,000	21,323	22,000
Charcoal	34,491	17,000	22,392	16,000
Total for Pennsylvania	960,884	989,000	246,908	275,000
Ohio:				
Hanging Rock bituminous	36,899	35,000	17,523	15,000
Hanging Rock charcoal	57,413	40,000	53,882	38,000
Mahoning valley bituminous	115,993	134,000		
Miscellaneous bituminous and charcoal	205,588	174,000	14,611 42,017	21,000 50,000
Total for Ohio	415,893	383,000	128,033	124,000

In commenting upon the above table, the bulletin says: "These figures show a total production in 1876 of 2,050,000 net tons of pig iron, against

2,266,581 net tons in 1875—a decrease of 216,581 tons, or about 10 per cent. The shrinkage in production in 1876 will, however, be more apparent if we compare the make of that year with that of the four years immediately preceding. In 1872 the production was 2,854,558 net tons; in 1873 it was 2,868,278 tons; in 1874 it was 2,689,413 tons; in 1875 it was 2,266,581 tons; and in 1876 our estimate gives 2,050,000 tons. The decrease since 1873, our year of greatest production, is thus seen to be, in round numbers, 800,000 tons, or fully 28 per cent. This is a very great reduction, but any estimate of its significance which the reader may make will be erroneous if it does not allow for the increased tendency in late years to substitute old rails for pig iron. Nevertheless, the shrinkage in the quantity of pig iron produced in this country since 1873, after making due allowance for the use of old rails, is not a cheering subject to reflect upon, especially when we remember that the furnace capacity of the country is equal to the production of twice the quantity of pig iron produced last year."

MANUFACTURES—GLASS WORKS.

M'KEE & BROS , PITTSBURG, PA.

Glassware flint.

Value in dollars of annual product: About $200,000.

Whole number of persons employed: 160.

CLASSIFICATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys	Time in operation during year....	REMARKS.
Foreman	1	....	$6 00	......	All year.	We sometimes work our producers 9, 10 or 11 turns per week; when they work 10 turns we would call it 5 days' work, but we mostly make 11 turns per week. Our men are generally sober, industrious men, and we have a good class of workmen. The smaller boys make from $4 to $6 per week. These boys will range from 12 to 15 years of age.
Blowers	3	....	5 00	......	5 to 6 dys per w'k.	
Gatherers	....	19	......	$2 00	" "	
Batch mixers	2	....	1 80	......	All year.	
Cutters'	2	....	3 00	......	"	
Master teazers	4	....	2 50	......	"	
Pot makers	1	....	2 50	......	....	
Assistant pot makers	3	....	1 50	......	All year.	
Packers	8	1	1 83	......	"	
Laborers	8	....	1 50	......	....	
Assistant blowers	6	....	3 00	......	5 to 6 dys per w'k.	
Boss packer	1	....	2 37½	......	All year.	
Carrying-in boys	....	24	......	80	5 to 6 dys per w'k.	
Sticking-up boys	....	26	......	1 00	" "	
Assistants in cutting shop	12	....	*	......	All year.	
Blacksmith	1	....	2 50	......	"	
Mason	1	....	2 25	......	"	
Drivers	5	....	2 00	.....	"	
Chimney blowers	6	....	4 00	......	5 to 6 dys per w'k.	
Pressers	10	....	3 80	......	" "	
Mould maker's assistants	3	....	3 00	......	All year.	
Apprentice	....	1	......	1 33⅓	"	
Mould maker—boss	1	....	6 00	......	"	

* Don't know.

Remarks.—We work in the factory night and day, five hours off turn, five on. We have not included office force or travellers.

We manufacture table glass-ware of all descriptions, bar goods, such as tumblers, ale glasses, beer mugs, bar bottles; druggists' shop furniture, such as tincture saltmouths, jars, chimneys all of flint or crystal glass.

M'KEE & BROS.

RICHARDS & HARTLEY, FLINT GLASS CO., PITTSBURGH, PA.

Crystal glass ware, table ware, lamps, bar goods, &c.
Value in dollars of annual product: about $130,000.
Whole number of persons employed: 110.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Foremen	2	....	$6 00		45 weeks.
Pressers	15	....	3 60		45 "
Gatherers	10	....	2 00		45 "
Batch mixers	3	....	2 50		52 "
Cutters	3	....	2 25		50 "
Master teazers	2	....	2 45		45 "
Assistant teazers	2	....	2 10		45 "
Pot makers	2	....	2 50		50 "
Packers	8	....	2 00		50 "
Laborers	7	....	1 50		50 "
Finishers	10	....	2 70		45 "
Boys	....	43	....	$ 80 & $1 00	45 "
Mould makers	4	....	2 50		52 "
Blacksmith	1	....	2 10		52 "
Teamster	1	....	2 16		52 "
Clerks	3	....	4 00		52 "

Characteristics of Establishment.—The factory is run day and night. When in operation the hands employed in the factory proper are divided into two gangs, working six hours on and six hours off, or long enough to make quantity required of each article, which is called a "move," and the time a "turn." This "move" is sometimes made in four hours, never more than five hours. The highest number of "turns" made by each gang in one week is 11. The average number while in operation is about 10. The employees in the factory proper are paid by the "turn," as follows: Pressers, from $1 80 to $2 50 per "turn"; finishers, $1 35 to $2 00; gatherers (boys), 90 cents to $1 12½; boys, 40 to 55.

The factory is generally stopped during the warm weather in July and August of each year from 4 to 8 weeks. Average age of boys employed in the factory about 14 years.

Time per day of packers, mould makers, pot makers, mixers, &c., 10 hours. Time of teasers, 12 hours per day, 7 days each week.

RICHARDS & HARTLEY FLINT GLASS CO.
JAS. D. WILSON, *Sec'y.*

CRYSTAL GLASS COMPANY, PITTSBURGH, PA.

Manufacturers of crystal table ware, bar ware and chimneys.
Value in dollars of annual product : $85,000.
Whole number of persons employed : Average 100.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Foreman	1		$4 00		
Chimney	8		3 50		8 weeks
Gatherers		6		$2 00	37 "
Batch mixers	2		2 25		42 "
Master teazers	2		2 20		37 "
Packers	3		2 00		37 "
Apprentice, (mould maker)	1	1		33	50 "
Laborers	2	1	1 16	62	37 "
Mould makers	4		3 25		50 "
Office hands	4		3 33		1 year.
Traveling salesman	1		4 00		1 "
Teamsters	2		2 00		50 weeks
Pressers	8		4 00		37 "
Stocking up and carrying in boys		30		90	
Finishers	16		2 00		37 "
Warehouse hands	1	(girls) 5	2 50	girls 50	40 "
Mould cleaners	1	" 3	2 00	" 50	37 "

Remarks.—The company is an incorporated one. Our production is crystal table ware, bar ware and chimneys. We occupy the space of ground 155 by 130 feet, and have two furnaces, which, if the times would permit to run to their extent, would give employment to 200 hands and produce glass to the amount of $200,000.

M. J. BENNETT,
Treasurer Crystal Glass Company.

KEYSTONE FLINT GLASS MANUFACTURING CO.

Lamp chimneys.
Value in dollars of annual product : $125,000.
Whole number of persons employed : about 140.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Foreman	1		$4 00	From $1 00 to $2 00	10 mos.
Blowers	26			2 00	
Gatherers*	26				
Batch mixers	2				
Helpers †		52			
Master teazers ‡	2				
Packers §	4				
Laborers ‖	6				
Girls (from 6 to 10) ¶					

* Gatherers get $2 and helpers $1. † Helpers for the blowers. ‡ Teazers get $2 25 per day. § Packers work by the gross, and earn about $3 per day. ‖ Laborers get from $1 67 to $2. ¶ Girls get about 75 cents per day.

Remarks.—We manufacture pure lead glass lamp chimneys.

JAS. B. GRAHAM, *Treas.*

KUNZLER & CO., PITTSBURGH, PA.

Crystal glass lamp chimneys, "annealed."

Quantity and value in dollars of annual product: 150,000 doz.; 21,546 boxes; 871 bbls.; 9 casks; $50,804 85.

Whole number of persons employed: 111.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Foremen	2		$5 00		
Blowers	20		4 00		7 months
Gatherers		30		$2 00	
Batch mixers	2		2 00		
Master teazers	2		2 15		
Packers	4		2 25		
Apprentices		6		3 00	
Laborers	1		2 00		
Blacksmith	1		1 66⅔		
Learmen	2		2 00		
Watchman	1		2 00		
Clerk	1		3 33⅓		
Traveling men	2		5 per cent on sales.		
Finishing boys		33		80	
Girls		(girls) 4		50	

The foremen, clerk, agents and watchman are employed the whole year.

KUNZLER & CO.

W. H. HAMILTON & CO.

Flint glass vials and bottles.

Value in dollars of annual product: $153,580.

Whole number of persons employed: 158.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Foremen	2		$4 00		11 mos.	
Blowers	40		3 50			
Batch mixers	3					
Teazers	4					
Packers		5		$1 20		Buy pots.
Apprentices		6		1 25		
Laborers	8		1 80			
Boys		86		55		
Watchmen	2		2 00			
Mould cleaners	2		1 25			

W. H. HAMILTON & CO.

ROBERT C. SCHMERTZ & CO., PITTSBURGH, PA.

Window glass.

Quantity in measure and value in dollars of annual product: 57,590 boxes of 50 feet each; value, $178,529.

Whole number of persons employed: 118.

CLASSIFICATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Foreman	1					
Blowers	16					
Gatherers	16		$3 25			
Batch mixers	3		2 00 2 25			First mixer gets $2 25.
Flatteners	5					
Cutters	7		4 00			May average a little more or less.
Master teazers	2		4 75			
Assistant teazers	4		2 38			
Pot maker	1		4 50			
Assistant pot makers	4		2 25			
Packers	2		5 75			This amount is to be divided among the two. Packing costs 4½ cents per 100 feet.
Laborers	9		1 50			
Second-hand boys		16		$ 80		
Flattening house ass'ts	11		2 00			
Coal diggers	7		2 50			We have our own coal mines.
Teamsters	5		1 50			Although hauling for us are not employed by us.
Lime burner	1		1 50			
Coke....do	1		1 50			
Blacksmiths	2					Work by the job.
Assorters of glass	2		1 50 2 50			
Spare workmen	3					Make what they can get nothing certain.

Characteristics of Establishment.—The reputation of the house for the manufacture of an A 1 article of window glass, is only equalled by one other concern in the United States, viz: Page & Harding, of Berkshire, Mass. The quality of the glass is the same as the best English or French cylinder—white in color; brilliant surface; is not sulphured, and will not stain as most of the French glass does. The glass is sold to New York and Philadelphia dealers, and the East generally; also through the West and North-West and California and Oregon.

ROBERT C. SCHMERTZ & CO.

BRYCE, WALKER & CO.

Box 306, Pittsburgh, Pa.

Table, lamp, perfumery, crystal and opal glassware.

Value in dollars of annual product: $220,000.

Whole number of persons employed: 164.

Foremen, 2; blowers, 24; gatherers, 18; batch mixers, 5; glass cutters, 4; assistant teazers, 3; packers, 14; laborers, 14; mould makers, 6; mould cleaners, 6; drivers, 2; boys in packing room, 10; men, 104; boys, 64; wages paid men, $200; wages paid boys, $50; in operation during year, 11½ months.

Characteristics of Establishment.—Glass factory is situated on Wharton, between 20th and 21st street, 26th ward, Pittsburgh, south side; is built of brick, and is 340x120 feet; 3 furnaces, with all the buildings necessary to the manufacture of glassware. The establishment was organized in 1850 by Bryce, M'Kee & Co., who operated it till 1855, when Bryce, Richards & Co. succeeded them. Bryce, Richards & Co. operated it till 1865, when they were succeeded by the present firm of Bryce, Walker & Co.

The ground occupied by the works is nearly two squares, of 360x120. One square having the factory with mould shop, mould room and packing room on it. The other square has the stables, straw sheds and warehouse, in which part of the manufactured ware is stored.

The office and warehouse is in the 1st ward, Pittsburgh, No. 95 Water street, and 122 First avenue.

BRYCE, WALKER & CO.

EVANS, SELL & CO., PITTSBURGH.

Manufacture lamp chimneys, tumblers, jars, etc.

Value of annual product, $140,000.

Whole number of persons employed, 115.

Foreman, 1; blowers, 32; gatherers, 32; batch mixers, 2; learsmen, 2; master teazers, 2; packers, 6; laborer, 1; watchman, 1; driver, 1; selectors, 2; washers, 2; finishing boys, 32; wages paid men, $4 per day; boys, $2 50; in operation during the year, 11 months.

TIBBY BROTHERS, PITTSBURGH, PA.

Flint vials, bottles and prescription ware.

Value in dollars of annual product: From $150,000 to $200,000.

Whole number of persons employed: 149.

Foremen, 2; blowers, 42; batch mixers, 4; teazers, 4; packers, 2, boys 4; apprentices, boys, 4; laborers, 6; bookkeepers, 2; shippers, 2; blacksmith, 1; boys to stick up, carry in, hold the moulds and clean off, 74; men make from $1 50 to $4 50 per day; boys make from $2 00 to $4 50 per week; in operation, 10 to 11 months.

Characteristics of Establishment.—We started the 1st February, 1866, with a 6 pot furnace, in the 9th (now 12th) ward, city of Pittsburgh, and have now just above Sharpsburg, on Allegheny river, two 10 pot furnaces. Our ware goes to druggists, perfumers, extracts, liquor dealers. Profits very small for over a year, with no prospect of any improvements; wages too high, considering the times, too many idle and unwilling to go to work. Laws are made to encourage such called exemption.

TIBBY BRO'S.

ATTERBURY & CO., PITTSBURGH, PA.

Value in dollars of annual product: $150,000.

Whole number of persons employed: about 100 men, boys and girls.

Foreman, $40 per week; blowers, 6 hours, $1 75; gatherers, 6 hours, $1 00; batch mixers, $2 50 per day; master teazers, $2 50 per day; packers, 4, at $12 50 per week; laborers, 6, at $1 50 per day; bookkeeper 1, at $1,000 per year; shipper 1, $1,000. Girls paper up goods. Men, 60; boys and girls, 40; wages paid boys, average 80 cents; in operation during year, 10 to 11 months. Blowers work 6 hours, called a turn; two sets night and day.

Characteristics of Establishment.—We have 2 10-pots furnace for flint glass, but are only running one furnace. Our specialty are lamps, opal ware and jelly glasses. The pots we do not make now, but buy them from manufacturer of pots. The blowers and boys in the glasshouse work six hours and are off six hours, that is we work night and day two sets of blowers and boys. One set relieves the other set, commencing Monday morning at 1 o'clock and working till Saturday noon at 1 o'clock. Trade at present being much depressed we get along with as few hands as we possibly can. Our annual sales used to exceed the amount given largely, but the great depreciation in values have reduced the values of manufactures full one-third.

ATTERBURY & CO.

EXCELSIOR FLINT GLASS COMPANY, PITTSBURGH, PA.

Manufacture lamp chimneys, jars and silvered reflectors.

Product: 40,000 boxes and barrels of glassware, value $100,000.

Whole number of persons employed: 104.

Classification.—Foreman 1; blowers 26; gatherers 26; batch mixers 2; packers 5; laborers 6; boys 36.

THOMAS WIGHTMAN & CO., PITTSBURGH.

Whole number of persons employed: 400 when full.

Product: 90,000 boxes window glass; 8,000 gross fruit jars; 50,000 boxes green glassware. Value not stated.

NOTE.—The Department would respectfully request that the glass manufacturers in their reports hereafter, will be more careful and explicit in the classification of their employees; also in their statement of wages paid, so that their reports may be properly tabulated.

BURGIN & SONS, 133 ARCH ST., PHILADELPHIA, PA.

Glass hollowware, viz.: Bottles and vials of all description.

Quantity and value in dollars of annual product: 6,283 packages, averaging 3¾ gross=23,561 gross, worth about $50,578.

Whole number of persons employed: 148.

CLASSIFICATION.	No. of men……	No. of boys… …	Daily wages paid men…………	Daily wages paid boys…………	Time in operation during year……
Foreman	1	….	$2 16⅔	………	4½ months.
Blowers	39	….	Avera'e 2 50	………	"
Engineers	2	….	2 33⅓	………	"
Batch mixers	2	….	1 79¼	………	"
Blacksmith	1	….	2 50	………	"
Master teazer	1	….	3 00	………	"
Assistant teazers	4	….	1 88⅔	………	"
Pot maker	1	….	1 83⅓	………	"
Assistant pot maker	1	..	1 50	………	"
Packers	5	1	1 60	$0 45¾	"
Apprentices	3	….	1 25	………	"
Laborers	8	….	1 25	………	"
Box makers	2	….	1 50	………	"
Lehr tenders	4	….	1 08⅓	………	"
Tending boys	….	71	………………	0 50	"
Bookkeeper	1	….	4 50	………	"
Shipping clerk	1	….	2 50	………	"
Carter	1	….	1 92	………	"

Characteristics of Establishment.—The above is for our last blast, beginning August 1, 1875, and ending July 31, 1876, but owing to prostration of business our furnaces were in operation but about half time, viz: 4½ months instead of nine, as we usually run.

Respectfully yours,

BURGIN & SONS,
Per JENKINS.

HENRY B. BENNERS, DYOTTSVILLE GLASS WORKS.

Philadelphia, Pa.

Green glass, hollow ware.

Value in dollars of annual product: $105,000.

Whole number of persons employed: 90.

Foreman, 1; blowers, 24; gatherers, 12 men, 15 boys; batch mixers, 2; master teazers, 1; assistant teazers, 3; pot makers, 2; assistant pot maker, 1; packers, 2; apprentices, 2; laborers, 8; demijohn coverers, 6; carters, 4; clerks, 4; bookkeeper, 1; engineers, 2; wages paid men, $160; wages paid boys, $21.

Characteristics of Establishment.—I manufacture bottles, nothing smaller than six ounce capacity, mostly carboys, demijohns, wine bottles, porter and ale bottles and mineral water bottles.

Have two furnaces on the premises, but owing to dull times had but one in blast. Commenced work October 5, 1874, and stopped June 16, 1875; began December 1875. Furnace went out of blast 22d June, 1876.

Being away from home could not forward this statement sooner, (August 31, 1876.)

Use anthracite coal as fuel for melting and pine wood for annealing.

HENRY B. BENNERS.

MANUFACTURES—COTTON.

D. TRAINER & SONS, LINWOOD, DELAWARE COUNTY.

Cotton goods and yarns.

Quantity in measure and value in dollars of annual product: 900,000 yds. of goods, 360,000 lbs. yarn, $370,000.

Whole number of persons employed: 200.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation during year
Carding—							
Overseers	3			$3 00			290 days in active times. 250 days in dull times.
Picker-tenders	3			1 25			
Drawing-frame tenders		3			$0 83		
Speeder-tenders		25			1 00		
Picker-boys			3			$0 50	
Grinders	6			1 33			
Strippers	6			1 25			
Spinning—							
Overseer	3			3 00			
Mule spinners	1		4	2 00		83	
Mule-backside piecers			4			50	
Frame-spinners		44	6		83		
Dressing—							
Overseer	1			2 50			
Second hand	1						
Spoolers		29			83		
Warpers	2	4		2 25	1 33		
Drawers and twisters	3	2		2 50	83		
Dressers	2			2 50			
Weaving—							
Overseers	1			3 00			
Weavers	5	30		1 33	1 33		
Drawing-in hands		2			83		
Repair shop, engine room, &c.							
Wood-workers	2			2 00			
Iron-workers	3			2 00			
Engineer	3			2 50			
Laborers	3			1 50			
Overseer in cloth-room	1			2 00			

D. TRAINER & SONS.

SAMUEL RIDDLE, SON & CO., GLEN RIDDLE, DELAWARE CO.

Tickings, flannels and stripes.

Quantity in measure and value in dollars of annual product: 1,840,000 yards; $150,000.

Whole number of persons employed: 220.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women ..	No. of youth....	Daily wages paid men..........	Daily wages paid women......	Daily wages paid youth.........	Time in operation during year....
Carding—							
Overseer	1			$2 50			287
Picker-tenders	2			1 50			"
Railway-tenders			2			$ 66⅔	"
Drawingframe-tenders		4			$ 75		"
Speeder-tenders		6			73		"
Picker-boy			1			58⅓	"
Grinder	1			1 50			"
Strippers			3			1 00	"
Spinning—							
Overseers	3			2 16⅔			284
Mule-backside piecers			8			1 08	"
Frame-spinners			33			50	"
Spoolers		12			75		"
Weaving—							
Overseers	4			2 16⅔			"
Weavers	51	47		*1 50	*1 00		"
Twisters	1		3	2 00		46	"
Beamers	3			1 88⅔			288
Repair shop, engine room, etc.—							
Wood-workers	4			2 00			"
Iron-workers	4			2 25			"
Engineer	1			2 16⅔			"
Laborers	2			1 50			"
Overseer in cloth-room	1			2 00			"
Dye-house	3			1 88			"
Cloth-room		1	3		75	70	"

* Estimated.

Characteristics of Establishment.—This table is not suited for our business, to give complete and accurate account, as for instance, we pay our weavers by the piece according to the work required and have no record of the time they make; our speeder-tenders are also paid by piece work, as are also the spinning-frame-spinners.

Our factories are driven by one over-shot waterwheel, 20 feet, one Lefel's turbine, 48 in., one Beam engine, 20-inch cylinder, 48-inch stroke, one Corliss engine, 28-inch cylinder, 48-inch stroke.

SAMUEL RIDDLE, SON & CO.

I. M. & D. LEWIS, SWARTHMORE P. O., DELAWARE CO., PA.

Manufacturers of Osnaburgs, checks, stripes, &c.

Quantity in measure and value in dollars of annual product: 1,023,782 yards; value, $102,338.

Whole number of persons: 81.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation during year
Carding—							
Overseers	1			$2 00			284 days.
Railway-tenders, drawing-frame tenders		2			$0 75		284 days.
Speeder-tenders		2			60		284 "
Picker-boy			1			$0 45	284 "
Grinder, stripper	1			90			284 "
Spinning—							
Overseer	1			1 91⅔			284 days.
Mule-spinner	2			2 00			280 "
Mule-backside piecers			2			66⅔	280 "
Creel tenders			3			50	280 "
Frame-spinners and doffers			8			50	284 "
Dressing—							
Reelers		1	1		66⅔	50	275 days.
Spoolers		2	2		81	81	284 "
Warpers	1		1	2 33⅓		1 00	284 "
Beamers and twisters and drawing in hands	3			Av'ge 1 83⅓			284 days.
Weaving—							
Loom fixers	2			2 08⅓			289 days.
Weavers	14	19		Av'ge 1 25	1 25		289 "
Bobbin winders			6			Av. 75	289 "
Repair shop, engine room, &c.							
Foreman	1			2 50			289 days.
Iron-worker, machinist & wood worker	1			2 25			275 days.
Engineer	1			1 83⅓			289 "
Laborer, teamster	1			1 50			270 "
Overseer in cloth-room	1			1 50			289 "
Helper in cloth room			1			75	289 "

Remarks.—You will notice the postoffice is now Swarthmore instead of Oakdale or Media. We also have a dye house, in which we do our own dyeing and that of other mills in the neighborhood. Employing 7 men, and doing a business of about $2,000 per month, running ¾ time, 6 of the men we pay $10 per week, and the head dyer $18 per week.

I. M. & D. LEWIS.

CHAS. ROBERTS, CHESTER, PA.

Cotton yarn.

Quantity in measure and value in dollars of annual product: 195,000 pounds cotton yarn, $48,750 50.

Whole number of persons employed: 35.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation dur'g year, hours,
Carding—							
Overseer	1			$3 00			
Picker-tender	1			1 50			
Railway-tenders			2			$1 00	
Drawing-frame tenders		2			$1 75		
Speeder tenders		3			3 00		
Grinder	1			2 00			
Spinning—							
Overseer	1			2 50			
Frame-spinners			15			7 00	
Dressing—							
Spoolers		5			4 50		
Warpers	2			5 00			
Repair shop, engine room, etc.—							
Iron-workers							3,120
Engineer	2			2 00			
Laborer			1			1 00	

CHARLES ROBERTS.

BROAD STREET MILLS, CHESTER, DELAWARE CO., PA.

Quantity in measure and value in dollars of annual report: 205,920 yds. goods, 286,000 lbs. yarn, $84,884.

Whole number of persons employed: 18 men, 22 women, 25 youths—total, 65.

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of women...	No. of youth....	Daily wages paid men..........	Daily wages paid women........	Daily wages paid youth.........	Time in operation during year....
Carding—							
Overseers	1			$2 66			310 dys.
Picker-tenders	1			1 33			"
Drawing-frame tenders		2	1		$1 66	$0 83	"
Speeder-tenders		6			6 00		"
Picker-boy			1			58	"
Grinder		1			1 33		"
Strippers			1			1 00	"
Spinning—							
Overseer	1			2 00			"
Mule-spinners	3			5 50			"
Mule-backside piecers			3			1 25	"
Frame-spinners			18			6 50	"
Dressing—							
Second hand			1			75	"
Spoolers		6			4 50		"
Warpers	3			5 00			"
Drawer and twister	1			1 33			"
Dresser	1			1 33			"
Weaving—							
Overseer	1			2 00			"
Weavers	1	7		1 25	5 33		"
Repair shop, engine room, &c.							
Wood-worker	1			2 00			"
Iron-worker	1			2 00			"
Engineer	1			2 16			"
Laborer	1			1 50			"
Overseer in cloth-room	1			2 00			"

Characteristics of Establishment.—Proprietors, Messrs. R. Patterson & Co., Philadelphia; cotton mill, steam power; containing 3,168 ring spindles, for warps; 3,024 mule spindles, self-acting, for filling; 26 power looms. Making cotton goods, (ticking, &c.,) warps and shuttle cops, using about 20 bales cotton per week. Wages paid during year 1875, $19,976 46. Annual consumption of anthracite coal, about 550 tons.

JAMES STEPHENS, *Agent.*

PATTERSON MILLS, CHESTER, DELAWARE CO., PA.

Cotton goods and yarn

Quantity in measure and value in dollars of annual product: 2,685,413 yards drillings and sheetings; $171,575,50.

Whole number of persons employed: 55 men, 93 women, 85 youths—Total, 233.

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of women ..	No. of youth....	Daily wages paid men..........	Daily wages paid women........	Daily wages paid youth........	Time in operation during year...
Carding—							
Overseers	2			$5 40			308 dys
Picker-tenders			2			$1 33	
Drawing-frame tenders		6			$5 00		
Speeder-tenders		13			13 00		
Spreader-tenders	4			5 00			
Grinders	2			2 66			
Strippers			6			3 00	
Spinning—							
Overseers	2			4 16			
Mule-spinners	2		10	2 50		7 92	
Mule-backside piecers			6			2 00	
Frame-spinners			50			20 00	
Dressing—							
Spoolers		16			11 50		
Warpers	4	8		8 75	8 68		
Drawers and twisters	3		1	3 66		1 10	
Dressers	3			7 50			
Weaving—							
Overseers	3			6 66			
Weavers	20	50		23 34	58 33		
Repair shop, engine room, etc.—							
Wood-workers	1			2 00			
Iron-workers	1			2 00			
Engineer	1			2 00			
Laborers	3			4 33			
Overseer in cloth-room	1			2 00			
Other hands	3		10	3 50		6 33	

Characteristics of Establishment.—Proprietors, Messrs. R. Patterson & Co., Philadelphia. Driven entirely by steam, containing 9,024 ring spindles—warp frame; 5,544 mule spindles—self-acting; 300 power looms. Weave nothing but drillings and sheeting, do neither bleach nor dye. Make a small quantity of warps and cops for marker, using about 42 bales of cotton per week, 1,600 tons coal per annum. Wages paid in 1875, $61,643 82.

WM. B. STEPHENS, *Supt.*

SAMUEL A. CROZER, UPLAND, DELAWARE CO., PA.

Colored cotton goods, such as plaids, checks and ginghams.

Quantity in yards and value in dollars of annual product: 4,933,635 yards, value, $492,363.

Whole number of persons employed: 273.

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of women....	No. of youth.....	Daily wages paid men...........	Daily wages paid women.........	Daily wages paid youth..........	Time in operation during year.....
Carding—							
Overseer	1			$3 33			306 days.
Picker-tenders	2			1 66			"
Drawing-frame tenders		3			$1 08		"
Speeder-tenders		10			1 23		"
Picker-boy			1			$1 33	"
Grinder	1			1 66			"
Strippers	2		2	1 50		83	"
Spinning—							
Overseer	3			3 00			"
Mule-spinners	3			1 50			"
Creel-tenders and piecers			8			58	"
Frame-spinners			37			60	"
Dressing—							
Overseers	1			3 66			"
Dyers	6			1 66			"
Spoolers and winders		34			1 20		"
Warpers	6			2 50			"
Beamers and twisters	8		2	2 50		50	"
Dressers	2		1	1 75		1 00	"
Weaving—							
Overseers	5			2 75			"
Weavers	20	20	66	2 00	1 50	1 50	"
Reaper shop, engine room, etc.—							
Wood-worker	1			2 50			"
Iron-workers	2			2 50			"
Engineer	1			3 00			"
Laborers	4			1 50			"
Overseer in cloth-room	1			2 66			"
Others in cloth-room	2		5	1 60		58	"

SAMUEL A. CROZER.

MR. DANIEL LEES, LEIPERSVILLE, DELAWARE CO., PA.

Quantity in pounds and value in dollars of annual product: 95,000 pounds cotton warps; $23,750.

Whole number of persons employed: 21 in cotton or warp department.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation during year
Carding—							
Overseer	1			$2 00			48 weeks.
Railway-tender	1			1 00			
Drawing-frame tender		1			$0 83		
Speeder-tenders		2			83		
Grinder	1			1 66			
Spining—							
Frame-spinners			11			$0 50	
Dressing—							
Spoolers			3			75	
Warper	1			2 65			

DANIEL LEES.

WOLFENDEN, SHORE & CO.

Manufacture woolen and cotton goods. Box 2698, Philadelphia.

Quantity in measure and value in dollars of annual product: (See report on Woolen.)

Whole number of persons employed: 30.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youths	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation during year
Carding—							
Overseer	1			$3 75			285 dys.
Picker-tender	1			1 67			"
Drawing-frame tenders		3			$1 50		"
Speeder-tenders		3			1 60		"
Picker-boy			1			$0 54	"
Grinder and stripper	1			1 50			"
Spinning—							
Overseer	1			2 50			"
Mule-spinners	2			1 67			"
Mule-backside piecers			6			50	"
Dressing—							
Spoolers		3	4		1 00	83	"
Warpers	2			2 00			"
Repair shop, engine room, &c.							
Wood-workers	2			2 50			"

WOLFENDEN, SHORE & CO.

BIRMINGHAM, WATSON & CO., PITTSBURGH.

Brown sheetings.

Quantity in measure and value in dollars of annual product; 1,822,563 yards; $128,250.

Whole number of persons employed: 203.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of apprentices	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Carding—									
Overseers	2				$2 50				227
Picker-tenders				7				50	“
Railway-tenders		2	2			$ 60		50	“
Drawing-frame tenders		3	2			60	$ 40		“
Speeder-tenders		15	3			67	45		“
Picker-boy				1				55	“
Grinders	2		1		1 50	65			“
Strippers	4				1 25				“
Spinning—									
Overseers	3				2 50				“
Mule spinners	1	6	1		1 50	67	50		“
Mule back-side piecers			2	6				40	“
Frame-spinners		18	3	12		67	45	28	“
Dressing—									
Overseer	1				2 50				“
Second-hand	1				1 75				“
Spoolers		14	1			75	50		“
Warpers		4	2			67	45		“
Drawers and twisters		5	2			70	45		“
Dressers	2		1		1 75		1 00		“
Weaving—									
Overseers	4				2 50				“
Weavers		54	3			1 10	50		“
Repair shop, engine room, &c.									
Foreman	1				2 67				“
Wood-worker	1				2 25				“
Iron-workers	3		1		2 25		1 10		“
Engineer	1				2 25				“
Laborers	2				1 75				“
Overseers in cloth-room	1	3			2 25	75			“

BIRMINGHAM, WATSON & CO.

EAGLE COTTON MILLS COMPANY, PITTSBURGH, PA.

Manufacture sheetings, yarns, warps, wicks, bags, twines and batting.

Quantity and weight and value in dollars of annual product: 176,748 lbs. batting, 2,822,239 yds. sheeting, 633,857 lbs. yarns, &c., value $412,941.

Whole number of persons employed: 403.

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of women...	No. apprentices,	No. of youth...		Daily wages paid men..........	Daily wages paid woman.......	Daily wages paid apprentices....	Daily wages paid youth.........	
				Girls.	Boys.				Girls.	Boys.
Carding—										
Overseers	2					$2 50				
Picker-tenders	2					1 33				
Drawing-frame tenders				9					$0 50	
Speeder-tenders		19					$0 66			
Picker-boys					13					$0 50
Grinders	3					1 50				
Strippers					8					83
Spinning—										
Overseers	3					2 42				
Mule-spinners				2					75	
Mule-bakside piecers				1					33	
Frame-spinners			48	44				$0 30	64	
Dressing—										
Overseer	1					2 50				
Second hand	1					1 33				
Spoolers				12					58	
Warpers		3					66			
Drawers and twisters		3					92			
Dressers		6					1 00			
Weaving—										
Overseers	2					2 50				
Weavers		64					83			
Drawing-in hand		1					66			
Repair shop, engine room, &c.—										
Foremen	2					2 50				
Wood-workers	2					2 25				
Iron-workers	2					2 25				
Engineers	2					2 50				
Laborers	2					1 83				
Overseer-in cloth-room	1					1 83				
Miscellaneous	26	8	19	68	24	1 63	60	37	53	53

One mill operated 292 full days; the other mill operated 207¾ full days.

Remarks.—The Eagle Cotton Mills company own and operate two mills, known as the "Eagle" and the "Banner" which are run by separate engines. The report rendered is a consolidated one.

EAGLE COTTON MILLS CO.
O. M. HARPER, *President.*

SAMUEL RIDDLE, SON & CO., GLEN RIDDLE, DELAWARE CO.

Principally cotton yarn.

Quantity in pounds: 600,000.

Whole number of persons employed: 35.

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of youth....	Daily wages paid men....	Daily wages paid youth....	Time in operation during year....
Dyers	4	....	$1 50	....	288¼ days.
Carding and spinning—					
Picker	....	1	....	$0 83	"
Carders	....	12	....	0 61	"
Spinners	2	10	1 50	0 58⅔	"
Overseer	1	....	2 50	....	"
Assistants	4	....	1 16	....	"

Remarks.—The building in which this machinery is placed is driven by a Corliss engine connected with our cotton mill. We have no data of quantity excepting what yarn we sold, which we give, this being but a portion of the production.

SAMUEL RIDDLE, SON & CO.

MANUFACTURERS—WOOLEN.

B. GARTSIDE & SONS, CHESTER, DELAWARE CO., PA.

Manufacturers of woolen jeans.

Quantity in yards and value in dollars of annual product: 660,000 yards, value, $212,000.

Whole number of persons employed: 78.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth......	Daily wages paid men............	Daily wages paid women..........	Daily wages paid youth...........	Time in operation during year.....
Wool-sorters	2	....	....	$1 50	....	....	289 days.
Wool-washer	1	....	....	....	....	....	"
Dyers	3	....	....	1 25	....	....	"
Overseer	1	....	....	2 50	....	....	"
Carding and Spinning—							
Picker	1	....	....	1 66	....	....	"
Carders	3	....	5	1 40	....	$1 00	"
Spinners	2	....	7	1 66	....	50	"
Beamer	1	....	....	2 33	....	....	"
Overseer	1	....	....	2 66	....	....	"
Weaving—							
Weavers	....	40	....	....	$1 25	....	"
Burler	....	1	....	....	....	....	"
Overseer	1	....	....	3 00	....	....	"
Dressing and Finishing—							
Finisher	2	....	....	1 25	....	....	"
Overseer	1	....	....	2 50	....	....	"
Engine room, yard, &c.—							
Engineer	1	....	....	2 50	....	....	"
Mechanic	1	....	....	3 00	....	....	"
Watchman	1	....	....	1 25	....	....	"
Foremen	1	....	....	3 00	....	....	"

B. GARTSIDE & SONS.

JOHNSTOWN MANUFACTURING COMPANY.

Johnstown, Cambria county, Pa.

Quantity in measure and value in dollars of annual product: (See Remarks.)

Whole number of persons employed: 198.

OCCUPATION AND CLASSIFICATION.	No. of men....	No. of women and girls........	No. of youth....	Daily wages paid men........	Daily wages paid women........	Daily wages paid youth........	Time in operation during year....
Wool-sorters	5		3	*$1 40.3		$0 53.3	305.5 dys
Wool-washers	2			1 27.5			"
Dyers	3			1 12.5			"
Overseers	2			3 12.5			"
Carding and spinning—							
Pickers	3		2	1 08.3		42.5	"
Carders	3	16		1 35	$0 43.9		"
Spinners	14		4	*1 78.2		48.2	"
Warpers and beamers	3	4		1 87.5	58.9		"
Reelers		8			*34.7		"
Overseers	2			3 00			"
Assistant	1			1 70			"
Weaving—							
Weavers		66			*85.2		"
Do....general		2	2		40.5	82.5	"
Burlers		9			40.5		"
Loom fixers	4			1 65.6			"
Overseer	1			3 75			"
Dressing and finishing—							
Fullers			2			93.7	"
Dressers or giggers	3		1	1 12.5		75	"
Scourers	1		1	1 35		75	"
Press-tenders	1		2	99		92.5.	"
Drawers and packers		8			74		"
Brushers		1			40.5		"
Shearers		2			55		"
Dryers			2			75	"
Do..general		3			50		"
Overseer	1			3 00			"
Markers		2			45		"
Engine room, yard, &c							
Engineer	1			2 00			"
Mechanics	2			2 00			"
Laborers, (watchmen included)	4			1 31			"
Firemen	1			1 35			"
Office	1			1 50			"

Remarks.—Woodvale woolen mill, owned by the Johnstown manufacturing company, and operated by Wood, Morrell & Co., Johnstown, Cambria county, Pa. Product, plain and fancy cassimeres from medium grade of merino wool, of which there were used 552,489 lbs., making 456,924½ yds., valued at $320,715 26 Mill contains 12 sets cards and is run by steam. Whole number of persons employed 200, including superintendent and book-keeper.

Where the daily wages are marked with asterisk * it is the average, hands working by pound, yard, piece, &c.

SAMUEL BANCROFT, MEDIA, DELAWARE CO., PA.

Quantity in measure and value in dollars of annual product: (See Remarks.)

Whole number of persons employed: 104.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of apprentices.	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid apprentices	Daily wages paid youth	Time in operation during year
Wool-washer	1				$1 26				307 days.
Dyers	4				1 26				"
Overseer	1				3 33				"
Carding and spinning—									
Picker	1			2	1 26			$ 45	"
Carders	2		3	6	2 68		$1 08	53	"
Spinners	6			6	1 84			50	"
Warpers and beamers	2				1 80				"
Reelers				2				80	"
Overseer	1				1 76				"
Weaving—									
Weavers	15	20		1	1 10	$1 10		45	"
Burlers		4				74			"
Overseers	3			1	2 07			45	"
Dressing and finishing—									
Fullers	2				1 72				"
Dressers or giggers	11				1 40				"
Finisher	1				1 40				"
Press-tender	1				1 67				"
Packer	1				2 00				"
Overseer	1				3 50				"
Engine room, yard, &c—									
Engineer	1				1 59				"
Mechanics	2				2 25				"
Laborers, (watchman included),	2				1 55				"
Foreman	1				8 33				"

Remarks.—Todmorden woolen mills, called 7 sett Moscow Beaver. No. of yards, 110,000 (per year.) Value of same, about $250,000.

Mills situated in Nether Providence, Delaware county, Pa.

SAM'L BANCROFT.

SHAW & ESREY, CHESTER, PA.

Jeans and doeskins, cotton and wool mixed.

Quantity in yards and value in dollars of annual product: 2,063,288 yards, value, $371,391 84.

Whole number of persons employed: 190.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation during year
Wool-washers			1			$1 25	305 days.
Dyers	7			$1 53			“
Do.	3			2 39			“
Carding and Spinning—							
Pickers			3			1 36	“
Carders			11			77	“
Spinners	6			2 27			“
Mule-peicers			12			60	“
Beamers	2			2 15			“
Twisters			2			58	“
Carders	2			3 00			“
Do.	3			1 42			“
Weaving—							
Weavers	13	67	36	1 45	$1 38	1 15	“
Burlers			6			46	“
Loom bosses	4			2 50			“
Dressing and Finishing—							
Finishers	2			2 21			“
Do.			5			1 00	“
Engine room, yard, &c.							
Engineers	2			2 37½			“
Laborers, (watchmen included,)	2			1 50			“
Foreman	1			3 50			“

SHAW & ESREY.

AUVERGNE MILLS, N. L. YARNALL, CHESTER, PA.

Quantity in measure and value in dollars of annual product: 500,000 yards; value, $75,000.

Whole number of persons employed: 39.

OCCUPATION AND CLASSIFICATION.	No. of men......	No. of women.. ..	No. of youth.....	Daily wages paid men............	Daily wages paid women..........	Daily wages paid youth...........	Time in operation during year.....
Wool-washer	1	......	......	$1 66⅔	....	....	Made 60 hours per week during the year excepting stoppages on holidays.
Dyer	1	......	......	2 25	....	....	
Carding and spinning—							
Picker	1	......	......	1 66⅔	....	....	
Carder	1	......	......	3 33⅓	....	....	
Spinners	1	......	2	1 66⅔	....	$0 66⅔	
Warper and beamer	......	......	1	....	....	58⅓	
Assistants	1	......	2	1 16⅔	....	1 00	
Weaving—							
Weavers	3	21	......	1 30	$1 30	....	
Burler	......	......	1	....	....	50	
Overseer	1	......	......	2 66⅔	....	....	
Dressing and finishing—							
Finisher	1	......	......	2 50	....	....	
Packer	1	......	......	2 00	....	....	
Engine room, yard, &c—							
Engineer	1	......	......	2 50	....	....	

Characteristics of Establishment.—Auvergne mills were built by N. L. Yarnall, and started in 1868. Size of main building, 50 by 100 feet in the clear, two stories high. A picker house, 32 by 32 feet, two stories high; attached boiler and engine house, one story high. Dye house, 40 by 60 feet, one story high. Machinery, 2 setts woolen cards, 42 by 48 inches; 1 self-acting mule, 676 spindels, 48 single bar looms. Kind of goods, Kentucky Jeans. Mill was burned October 2, 1872; was rebuilt and in operation again April 12, 1873. Situated on Delaware river, corner of Delaware and Flower streets, South Chester, Pa.

DANIEL LEES, LEIPERVILLE.

Box 291 Chester, Delaware county, Pa.

Quantity in yards and pounds and value in dollars of annual product: 60,400 lbs. cotton, and cotton and wool mixed; weaving 110,350 yards, value $12,138, $22,952.

Whole number of persons employed: 12 yarn department, 10 weaving department.

OCCUPATION AND CLASSIFICATION.	No. of men.....	No. of women...	No. of youth....	Daily wages paid men	Daily wages paid women.........	Daily wages paid youth........	Time in operation during year...
Dyer	1	....	.....	$1 50	....	....	....
Carding and spinning—							
Pickers	.....	....	1	65	....	....	40 wks.
Carder	1	....	2	2 10	....	$0 83	"
Spinners	2	....	4	1 75	....	63	"
Reeler	.....	1	.....	....	$0 83	....	"
Weaving—							
Weaver	1	8	.....	1 20	1 20	....	22 "
Overseer	1	....	.....	2 00	....	....	"

DANIEL LEES.

YOUNGMAN, CASWELL & CO.

Cassimeres, flannels, blankets, yarns and lap robes.

Quantity in measure and value in dollars of annual product: 120,000 yards, valued at $150,000.

Whole number of persons employed: 45.

OCCUPATION AND CLASSIFICATION.	No. of men........	No. of women.....	No. of youth......	Daily wages paid men	Daily wages paid women	Daily wages paid youth.............	Time in operation during year......
Wool-sorter	1	....	....	$1 00	In all cases we pay the same to women as men for the same work.	....	....
Wool-washer	1	....	....	1 00		....	....
Dyer	1	....	....	3 00		....	....
Overseers	2	....	....	2 75		....	....
Carding and spinning—							
Picker	1	....	....	75		....	....
Carder	1	....	....	2 75		....	....
Spinner	1	....	....	2 75		....	....
Warper and beamer	1	....	....	1 25		....	....
Reeler	....	1	....	1 50		....	....
Assistants	7	....	....	50 to 1 00		....	....
Weaving—							
Weavers	9	6	....	1 25		....	....
Spoolers	2	2	....	50		....	....
Overseers	3	3	....	50		....	....
Dressing and finishing—							
Fuller	1	....	....	1 00		....	....
Dresser or gigger	1	....	....	1 00		....	....
Finisher	1	....	....	2 50		....	....
Press-tender	1	....	....	75		....	....
Drawer	1	....	....	1 25		....	....
Brusher	1	....	....	....		....	....
Assistants	3	....	....	....		....	....
Engine room, yard, &c—							
Helpers	2	12	8	1 00		50	12 months.

Characteristics of Establishment.—Three setts cards, one pair Paul's self acting mules, one jack, nine broad looms.

YOUNGMAN, CASWELL & CO.

J. C. SHOEMAKER'S SONS, WYOMING, LUZERNE CO.

Manufacturers of flannels and yarns.

Value of annual product from $15,000 to $20,000.

Number of persons employed : 10.

Dyer, 1 ; carders, 2 ; spinners, 2 ; reelers, 2 ; weavers, 3—consisting of 3 men, 5 women and 2 youth ; average daily wages paid men, $2 per day ; average daily wages paid women, $1, and $4 per week for youth ; time in operation during the year, 9 months.

JOSEPH STEVENSON, NESCOPECK, LUZERNE CO.

Woolen manufactory.

Employ 3 men and 2 women.

Manufacture 1,000 yards of flannel, valued at	$400 00
Do. 40 pairs of blankets, at $2 50	100 00
Do. 3,000 pounds of blue yarn.	
Do 1,000 pounds of white yarn	1,000 00

WILLIAM L. RICE, TRUCKSVILLE, LUZERNE CO., PA.

Manufacture satinet and cloth, flannel and stocking yarn.

Value of annual product, $3,000.

Number of persons employed is 4, including self and 2 children ; employ 1 girl, at $2 per week and board.

M. HALFPENNY & CO., LEWISBURG, PA.

Manufacturers of cassimeres, flannels, blankets, yarns, &c.

Quantity in yards and pounds and value in dollars of annual product: 54,455 yards woven goods and 10,870 pounds knitting yarn, value, $54,828.

Whole number of persons employed, 33.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation during year
Wool-sorter	1			$2 00			299 days.
Dyer	1			1 75			"
Overseer	1			3 50			"
Picker			1			75	"
Carders			2			$1 33⅓	"
Spinners	2			3 25			"
Warper and beamer		1			80		"
Reeler and spooler		2			$1 33⅓		"
Overseer	1			2 25			"
Assistant	1			1 00			"
Weaving—							
Weavers		10			9 00		"
Burler		1			67		"
Overseer	1			3 00			"
Assistant	1			1 50			"
Dressing and Finishing—							
Fuller	1			2 00			"
Dressers or gigger	1		1	1 17	67		"
Finisher, press-tender, drawer and brusher	1			2 00			"
Engine room, yard, &c.—							
Engineer	1			2 00			"
Bookkeeper and clerk	2			5 00			"

M. HALFPENNY & CO.

B. GRIFFEY & CO., WHITE DEER MILLS, UNION CO., PA.

Cassimeres, jeans and flannels

Quantity in measure and value in dollars of annual product: 47,457 yards; $47,092 40.

Whole number of persons employed: 37.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation during year
Wool-sorter	1			$1 75			Mill in operation running eight months in the year 1875, on an average of twenty to twenty-two days per month.
Wool-washer	1			1 00			
Dyer	1			2 00			
Overseer	1			3 00			
Carding and spinning—							
Picker	1			75			
Carder	1			1 25			
Spinners	2		2	1 50		$0 50	
Warper and beamer	1			1 25			
Reeler		1				50	
Overseer	1			2 25			
Assistants			3			50	
Weaving—							
Weavers		11			$1 12		
Burler		1			60		
Overseer	1		2	1 50		50	
Dressing and finishing—							
Fuller	1			1 40			
Dresser or gigger	1			1 00			
Finisher	1			1 62			
Press-tender	1			2 25			
Engine room, yard, &c—							
Fireman	1			1 00			
Watchman	1			75			

B. GRIFFEY & CO.
Per S.

WOLFENDEN, SHORE & CO.

Box 2698 P. O., Philadelphia.

Manufacturers of woolen and cotton goods.

Quantity in measure and value in dollars of annual product: 975,000 yards, value $195,000.

Whole number of persons employed: 146.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth	Time in operation year
Wool-sorter	1	4	......	$2 50	$0 95	......	285 dys.
Wool-washers and dyers	5	......	......	1 67	......	......	"
Carding and spinning—							"
Pickers	5	......	2	1 60	......	$0 50	
Carders	6	......	7	1 60	......	95	"
Spinners	3	......	......	1 67	......	......	"
Warpers and beamers	3	......	1	1 83	......	60	"
Overseers	2	......	......	2 50	......	......	"
Assistants	2	......	13	1 42	......	45	"
Weaving—							
Weavers	29	38	......	1 20	1 20	......	"
Burlers	......	2	3	......	95	65	"
Overseers	4	......	......	2 67	......	......	"
Dressing and finishing—							
Fullers	2	......	......	2 13	......	......	"
Dressers or giggers	2	......	......	1 67	......	......	"
Finisher	1	......	......	2 50	......	......	"
Press-tender	1	......	......	1 50	......	......	"
Drawer	......	1	......	......	1 00	......	"
Brusher	......	1	......	......	67	......	"
Packer	1	......	......	1 50	......	......	"
Engine room, yard, &c.—							
Engineer	1	......	......	2 25	......	......	"
Mechanics	2	......	......	2 50	......	......	"
Laborers, (watchmen included)	4	......	......	1 75	......	......	"

WOLFENDEN, SHORE & CO.

M'CALLUM, CREASE & SLOAN, PHILADELPHIA, PA.

Carpets.

Quantity in yards and pounds and value in dollars of annual product: 221,463 pounds worsted, 567,187 pounds filling, 340,890 yards ingrain; value, $711,836 67.

Whole number of persons employed: 261.

OCCUPATION AND CLASSIFICATION.	No. of men	No. of women	No. of youth	Daily wages paid men	Daily wages paid women	Daily wages paid youth
Designer	1			$6 41		
Foremen	10			2 00 to 4 16⅔		
Machinists	4			2 50		
Carpenter	1			2 75		
Weavers	52			1 83		
Weavers		40			$1 25	
Spinners	4			2 25		
Engineer	1			2 75		
Laborers	29	74	45	1 50	1 00	$0 50 to $1 00

M'CALLUM, CREASE & SLOAN.

TANNERIES.

One of the most important and extensive branches of industry in Pennsylvania is the manufacture of leather, whether considered in relation to the great number of persons to whom it gives steady employment at fair wages, or the large amount of capital used in its operations. Its productive results amount to millions of dollars annually, and it cannot be doubted that a full compilation of facts showing its present extent and condition would be of much general interest to the people of the State, and of especial value to those engaged in the business. It is, therefore, greatly to be regretted that there has not been a more general response to the urgent requests made by this Bureau upon those most directly interested for information. Reports from 172 establishments (less than one-fourth of the entire number in the State) were received, and are given in the pages that follow. A compilation of these reports gives the following results:

Annual product of leather in pounds	25,934,107
Value of leather produced	$7,845,985
Number of persons employed	1,706
Number of domestic hides tanned	392,485
Value of same	$1,947,377
Number of foreign hides tanned	359,163
Value of same	$1,884,477
Number of calf skins tanned	38,403
Value of same	$42,903
Total value of hides and calf skins tanned	$3,874,757
Value of bark used	$964,884

The following statistical information in relation to the manufacture of leather in Pennsylvania is taken from the Census Report of the United States for 1870, "Statistics of Wealth and Industry," and it will be seen how important this industry is to citizens of this State:

LEATHER—TANNED.

Establishments	890
Hands employed	4,650
Capital	$11,800,046
Wages	$1,683,479
Materials	$13,994,036
Products	$19,828,323

LEATHER—CURRIED.

Establishments	558
Hands employed	1,080
Capital	$1,830,461
Wages	$298,981
Materials	$4,479,454
Products	$5,429,833

LEATHER—MOROCCO, TANNED AND CURRIED.

Establishments	25
Hands employed	1,002
Capital	$1,342,778
Wages	$539,372
Materials	$2,051,813
Products	$3,225,041

LEATHER—DRESSED SKINS.

Establishments	22
Hands employed	148
Capital	$344,530
Wages	$65,867
Materials	$267,777
Products	$416,299

TOTAL IN PENNSYLVANIA.

Establishments	1,495
Hands employed	6,880
Capital	$15,317,785
Wages	$2,587,699
Materials	$20,793,080
Products	$28,899,496

There are no complete statistics to show what the exact growth of the business has been since the year 1870, but it is estimated by the Tanner's Association of Pennsylvania that the amount of capital now employed in the business in the State is at least $20,000,000, being an increase of something more than 25 per cent. There would also be a corresponding increase in the amount of the annual products.

ADAMS COUNTY.

William H. Rupp, post office address, Gettysburg, Pa.

Production, rough leather and rough calf skins; annual product, 1,300 sides leather and 600 calf skins; value $6,164; number of persons employed, 3; tons of oak bark used, 90; value of same, $720; domestic hides tanned, 650 ; value of same, $3,250 ; calf skins tanned, 600 ; value of same, $1,050 ; wages per day paid employees—beam hands, $1 50 ; yard hands, $1 ; bark grinder, (boy,) 50 cents.

Remarks.—This yard is small, having 18 layaway vats, 6 leaches, 5 handlers, 1 bate, 1 pool and 2 limes. The bark used is all ground by horse power, there being neither steam or water power on the yard.

Edmund Crouse, post office address, Littlestown, Pa.

Value of annual product, $5,000 to $6,000 ; number of persons employed, 2 ; cords of oak bark used, 75 ; value of same, $650 ; domestic hides tanned, 800 ; value of same, $3,000 ; wages of employees per day, $1.

Remarks.—In operation during the entire year. The yard has 30 handler and layaway vats, 3 limes and 4 leaches ; value of property, $3,000.

Miller's Tannery.—John F. Miller, post office address, Granite Hill, Pa.

Production, harness, upper leather and calf skins ; value of annual product, $1,200 ; cords of oak bark used, 25 ; value of same, $200 ; domestic hides tanned, 150 ; value of same, $850 ; calf skins tanned ; 75 ; value of same, $200.

Remarks.—The yard contains 20 vats, and is without any of the modern improvements in it, and consequently the old slow process of tanning is followed.

J. E. Steinour & Bro., post office address, Arendtsville, Pa.

Remarks.—Capacity of yard, 1,200 hides annually ; bark ground by water power ; cannot furnish statement, as strict accounts were not kept.

ALLEGHENY COUNTY.

A. & J. Groetzinger, post office address, Allegheny city, Pa.

Production, oak sole leather ; annual product in lbs., 630,000 ; value of same, $225,000 ; number of persons employed, 32 ; cords of rock-oak bark used, 5,000 ; value of same, $63,000 ; domestic hides tanned, 15,000 ; value of same, $120,000 ; wages per day paid employees—beam hands, $2 06¼ ; yard hands, $1 66⅔ ; rollers and spongers, $2 ; bark grinders, $1 33⅓ , common laborers, $1 50 ; engineers, $2 50 ; teamsters, $2.

Remarks.—Full time during 1875.

John C. Lappe, post office address, Allegheny city, Pa.

Production, harness leather ; annual product in lbs., 308,134 ; value of same, $115,454 62 ; number of persons employed, 23 ; cords of oak bark used, 1,625 ; value of same, $2,115 ; domestic hides tanned, 8,320 ; value of same, $54,080 ; wages per day paid employees—shavers and skivers, $2 40 ; beam hands, $1 90 ; yard hands, $1 58 ; scourers, $1 83 ;

engineer, $1 83; common laborers, $1 33; stuffers and setters, $2 17; blackers, $1 83; finishers, $2 00; clerk, $2 00.

Remarks.—In operation during the entire year, Sundays excepted.

ARMSTRONG COUNTY.

C. Mardorf, post office address, Freeport, Pa.

Production, sole leather; value of annual product, $15,000 to $20,000; number of persons employed, 4 to 5; cords of oak bark used, 200; value of same, $2,500; domestic hides tanned (cow and steer,) 1,000; kip, 100; calf, 500; sheep, 100; value of same, $6,650; wages of employees per day, $1 50 to $2 00.

BEDFORD COUNTY.

A. L. Hench, post office address, Alum Bank, Pa.

Production, B. A. oak sole; annual product in lbs., 153,410; value of same, $51,000; number of persons employed, 8; cords of oak bark used, 925; value of same, $6,012 50; foreign hides tanned, 3,700; value of same, $30,020; wages per day paid employees—beam hands, $1 30; yard hands, $1 23; rollers and spongers, $1 30; bark grinders, $1 23; engineers, $1 30.

Remarks.—In operation during the entire year. Use steam power, using spent tan for fuel. Remove hair from hides by sweating.

J. B. Hoyt & Co., post office address, Everett, Pa.

Production, oak butts; annual production in lbs., $1,000,000; value of same, $375,000; number of persons employed, 50 to 60; wages per day paid employees, $1 25 to $2 00.

A. Haderman & Son, post office address, New Enterprise, Pa.

Production, harness, upper, calf and sheep skins; value of annual product, $6,000; number of persons employed, 4; cords of oak bark used, 180; value of same, $1,080; domestic hides tanned, 594; value of same, $1,804; calf and sheep skins tanned, 230; value of same, $230 50; wages per day paid employees—tanners, $1; bark grinders, 75 cents.

Remarks—In operation during the entire year. Men do not work at any particular branch of the trade, but do beam work, yard work, currying and finishing, just as may be required.

Chestnut Ridge Tannery.—Wm. A. B. Clark, post office address, Schellsburg, Pa.

Value of annual product, $11,000 to $13,000; number of persons employed, 4 to 5; cords of oak bark used, 200 to 250; domestic hides tanned, 1,400 to 1,600; value of same, $8,000.

Remarks.—In operation during the entire year. Tannery is a 46 layaway concern, machinery propelled by a 20-horse power, 10 inch cylinder engine; building all brick; use spent tan with some wood for heating boiler; tan about three thousand *sides* light pebble grain yearly, at a cost of $4 50 to $5 66 for each hide, which are generally purchased in Chicago. Have been in the habit of tanning 200 to 300 Texas hides yearly to roll for sole leather, mostly for home trade, balance of product sold in the rough in Baltimore, Philadelphia and New York, the greater part in Philadelphia. Owing to the extreme depression in our trade, I have not been able to throw any energy into the business since the panic. Made improvements in 1873 and 1874, but have not been well paid for the investment.

Griffith's Tannery.—John Griffith, post office address, Spring Meadow, Pa.

Production, slaughter leather; annual product in lbs., 4,400; value of same, $1,540 25; number of persons employed, 2; cords of oak bark used, 40; value of same, $280; domestic hides tanned, 250; value of same $700; calf and sheep skins tanned, 150; value of same $120.

Remarks.—In operation during 10 months of the year. Cold water process; horse power bark mill; 15 layaway vats.

BLAIR COUNTY.

Duncansville Tannery.—William Smith, post office address, Duncansville, Pa.

Annual product in lbs., 136,000; value of same, $35,000; number of persons employed, 8; cords of bark used, 200 of oak, 20 of hemlock; value of same, $1,170; domestic hides tanned, 3,900; value of same, $19,500; foreign hides tanned, 100; value of same, $750; wages per day paid employees—tanners, $1 80; beam hands, $1 80; yard hands, $1 44; engineer, $1 75.

Remarks.—The Duncansville tannery is located in a good bark region (oak and hemlock) on a branch of the Juniata river, and is therefore supplied with good water. The present buildings are new, the old ones having been destroyed by fire in 1872. The yard is one of the oldest in the country, having been put down prior to the year 1800.

Wm. M. Bloom, post office address, Martinsburg, Pa.

Sales of leather during year, $1,740; number of persons employed, 2; cords of oak bark used, 40; value of same; $280; domestic hides tanned, 305; value of same, $1,160; calf and sheep skins tanned, 75; value of same, $57 50.

Remarks.—In operation during 10 months of the year, ; tan by the old process, with cold liquors; have 13 layaway vats, 1 handler, 1 bate, 2 limes and 1 water pool; the handler, bate, limes and water pool are under roof, the yard is not; business very dull at present; am only paying 5 cents per pound for beef hides, 8 cents for calf and 20 cents for sheep skins, and do not find much money in them at these prices.

BRADFORD COUNTY.

Underhill & Noble, post office address, Athens, Pa.

Production, hemlock sole leather; annual product in lbs., 706,567; value of same, $167,268 86; number of persons employed, 30; cords of hemlock bark used, 4,400; value of same, $23,100; domestic hides tanned, 6,404; value of same, $25,439 01; foreign hides tanned, 12,962; value of same, $72,700 76; wages per day paid employees—beam hands, $1 35; yard hands, $1 25; rollers and spongers, $1 40; leach pitchers, $1 50; scrubbers, $1 50; handlers, $1 25; loft hands, $1 25; engineers, $1 37; liquor changers, $1 25; laborers, $1 25; foreman, $800 per annum, and 1 outside foreman, as clerk, &c., at $1,000 per annum.

Remarks.—Time in operation, 11 months during the year; tannery buildings, wood; engine room, stone; power, steam.

Gleason & Irvin, post office address, Canton, Pa.

Production, Union crop leather; annual product in lbs., 91,473; value of same, $28,356 63; number of persons employed, 5; cords of hemlock bark used, 400; value of same, $1,600; cords of oak bark used,25; value of same, $187 50; domestic hides tanned, 2,478; value of same, $18,899 69; wages per day paid employees—tanners, $1 75; beam hands,$1 50; yard hands, $1 33⅓; rollers and spongers, $1 75; bark grinders, $1 00.

Remarks.—In operation during entire year.

Scotia Tannery.—Adam Inness, post office address, Granville Centre, Pa.

Production, Union crop sole; annual product in lbs., 295,012; value of same, $94,403 84; number of persons employed, 18; cords of hemlock bark used, 1,450; value of same, $7,975; domestic hides tanned, 8,305; value of same, $58,135; wages per day paid employees—foreman, $3 00; beam hands, $1 50; yard hands, $1 15, rollers and spongers, $1 25; bark grinders, $1 15; leach hands, $1 15; loft hands, $1 15; engineers, $1 35; teamsters, $1 25; carpenter, $2 50.

Remarks.—In operation during the entire year. During the year there was a reduction in the rate of wages paid employees, but not in proportion to loss sustained by the operator in carrying on the business owing to the general depression of the trade. The capacity of the tannery is about 9,500 hides per annum. Bark account is not separate—have given bark used during the year.

Caledonia Tannery.—Adam Inness, post office address, Grover, Pa.

Production, Union crop sole; annual product in lbs., 325,872; value of same, $101,020 32; number of persons employed, 17; cords of oak and hemlock bark used, 1,650; value of same, $9,075; domestic hides tanned, 9,501; value of same, $66,507; wages per day paid employees—foreman, $3 00; beam hands, $1 50; yard hands, $1 15; rollers and spongers, $1 25; bark grinders, $1 15; leach hands, $1 15; engineers, $1 35; loft hands, $1 15; teamsters, $1 25; carpenters, $2 50.

Remarks.—In operation during the entire year. The capacity of the tannery is 15,000 hides per annum.

Towanda Tanning Company.—Post office address, Powell, Pa.

Production, hemlock sole leather; annual product in lbs., 473,658; value of same, $96,941 34; number of persons employed, 30; cords of hemlock bark used, 3,017; value of same, $18,102; foreign hides tanned, 13,718; value of same, $67,248 92; wages per day paid employees—beam hands, $1 50; yard hands, $1 50; rollers and spongers, $1 50; bark grinders, $1 50; common laborers, $1 50.

Remarks.—In operation during eight months of the year. In addition to the employees above classified, the company employ 1 superintendent, 1 bookkeeper and 1 engineer.

Bowen & Inness, post office address, Troy, Pa.

Production, Union crop sole leather; annual product in lbs., 144,000; value of same, $38,000; number of persons employed, 6; cords of hemlock bark used, 750; value of same, $4,125; domestic hides tanned, 4,000; value of same, $24,000; wages per day paid employees—tanners, $1 90; beam hands, $1 38; rollers and spongers, $1 25; bark grinders, $1 25.

Remarks.—In operation during the entire year.

A. A. Bishop, post office address, Wysox, Pa.

Production, upper, harness and calf skins; number of persons employed, 1; cords hemlock bark used, 20; value of same, $80; domestic hides tanned, 195; value of same, $435; calf skins tanned, 150; value of same, $160.

Remarks.—In operation during 6 months of the year.

BUCKS COUNTY.

R. B. Delp, post office address, Churchville, Pa.

Production, upper leather and calf skins; number of persons employed, 1; cords of oak bark used, 75; value of same, $525; pounds of extract used, 3,000; value of same, $240; domestic hides tanned, 900; calf skins tanned, 500.

Remarks.—In operation during 9 months of the year.

A. F. Sheetz, post office address, Doylestown, Pa.

Production, upper leather and calf skins; number of persons employed, 3; cords of oak bark used, 175; value of same, $1,750; pounds extract used, 800; value of same, $40; domestic hides tanned, 1,000; value of same, $3,725 97; calf skins tanned, 700; value of same, $1,110 70.

Remarks.—In operation during the entire year. The tannery is a brick building, covered with tin, and is two stories high. It contains 27 vats, all under cover, 4 limes, 4 bates, 2 pools and 4 leaches. Bark house attached. All in good order and operated by steam.

Noah Wambold, post office address, Sellersville, Pa.

Production, kip and calf skins; value of annual product, $3,576; number of persons employed, 3; cords of oak bark used, 80; value of same, $560; domestic hides tanned, 682; calf skins tanned, 114.

A. D. Atherholt, post office address, Tomhickon, Pa.

Production, upper leather and calf skins; annual product in lbs., 10,510; value of same, $4,544; number of persons employed, 3; cords ofoak bark used, 100; value of same, $1,000; domestic hides tanned, 680; value of same, $1,960; calf skins tanned, 200; value of same, $250.

Remarks.—In operation during the entire year. Employ 3 men who do all the work of the tannery. They receive 75 cents each per day with board.

CAMBRIA COUNTY.

John J. Evens, post office address, Ebensburg, Pa.

Value of annual product, $3,200; number of persons employed, 3; wages per day paid employees—tanners, $1; bark grinder, (boy,) 50 cents.

W. H. Rosensteel, post office address, Johnstown, Pa.

Production, Union crop sole leather; annual product in lbs., 570,735, value of same, $179,185 50; number of persons employed, 25; cords of hemlock bark used, 3,000; value of same, $18,000; cords of oak bark used, 500; value of same, $4,500; domestic hides tanned, 18,000; value of same, $75,000; wages per day paid employees—beam hands, $1 50;

yard hands, $1 35 ; rollers and spongers, $1 40 ; bark grinders, $1 10 ; engineers, $2 00 ; common laborers, $1 10.

Remarks.—Tan Union crop sole and bellies exclusively ; received first prize at the Vienna Exposition, 1873 ; tan at a given rate per pound for another party.

John E. Hare, post office address, Summer Hill, Pa.

Annual product in lbs , 2,000 ; value of same, $700 ; number of persons employed, 1 ; cords of oak and hemlock bark used, 50 ; value of same, $280 ; domestic hides tanned, 85 ; value of same, $191 ; calf skins tanned, 50 ; value of same, $50 ; sheep skins tanned, 25 ; value of same, $6 25.

CAMERON COUNTY.

Hamilton, Marten & Co., post office address, Emporium, Pa.

Production, hemlock sole leather; annual product in lbs., 562,188 ; value of same, $140,430 03 ; number of persons employed, 38 ; cords of hemlock bark used, 4,000 ; value of same, $20,000 ; domestic hides tanned, 9,000 ; value of same, $50,000 ; foreign hides tanned, 7,000 ; value of same, $45,000.

Remarks.—Pay employees from $1 35 to $1 45 per day.

B. F. Sherwood, post office address, Sterling Run, Pa.

Production, hemlock sole leather; annual product in lbs., 660,000 ; value of same, $198,000 ; number of persons employed, 34 ; cords of hemlock bark used, 5,000 ; value of same, $22,500 ; foreign hides tanned, 20,000 ; value of same, $88,000 ; wages per day paid employees—tanners, $5 ; beam hands, $1 50 ; yard hands, $1 35 ; rollers and spongers, $1 54 ; bark grinders, $1 25 ; bookkeeper, $2 00 ; common laborers, $1 15.

Remarks.—In operation during the entire year. Inasmuch as this is a sole leather establishment, it is usually run to its full capacity. It is always in operation except during break downs, which are liable of course to such concerns.

CARBON COUNTY.

Lehigh Gap Tannery.—Hailer & Bro., post office address, Lehigh Gap, Pa.

Number of persons employed, 1 ; cords of oak bark used, 75 ; value of same, $600 ; domestic hides tanned, 600 ; value of same, $1,587 ; calf skins tanned, 300 ; value of same, $390.

CENTRE COUNTY.

Kurtz & Stover, post office address, Aaronsburg, Pa.

Number of persons employed, 2 ; annual product in lbs., 6,800 ; value of same, $1,768 ; cords of oak and hemlock bark used, 80 ; value of same, $200 ; domestic hides tanned, 670 ; value of same, $1,446.

Remarks.—Two partners who do all their own work. Tan on a small scale by horse power.

James L. Sommerville, post office address, Bellefonte, Pa.

Production, oak, slaughter, sole and belt leather ; annual product in lbs., 138,996 ; value of same, $47,258 64 ; number of persons employed, 8 ; cords of oak bark used, 1,050 ; value of same, $8,400 ; domestic hides tanned, 4,088 ; value of same, $30,362 ; wages per day paid employees—beam hands, $1 66 ; yard hands, $1 25 ; rollers and spongers, $1 25 ; bark grinders, $1 20 ; engineers, $1 66.

Remarks.—In operation during the entire year. Under the head of "domestic hides tanned" is given the number worked in during 1875. There is always in the yard six months' stock in process of tanning. "Quantity in pounds" is the amount of stock actually shipped.

Daniel Moser, post office address, Boalsburg, Pa.

Production, sole, upper, calf and sheep skins ; value of annual product, $1,000 ; number of persons employed, 2.

C. Buck, post office address, Fleming, Pa.

Production, oak sole leather ; annual product in lbs., 88,000 ; value of same, $26,400 ; number of persons employed, 4 ; cords of hemlock bark used, 50 ; value of same, $225 ; cords of oak bark used, 550 ; value of same, $3,850 ; wages per day paid employees—beam hands, — ; yard hands, $1 25 ; rollers, $1 25 ; engineers, $1 40.

Remarks.—In operation during the entire year. Tans Texas hides.

J. F. Montgomery & Bro., post office address, Howard, Pa.

Production, light slaughter kip and calf skins ; annual product in pounds, 5,444 ; value of same, $1,800.

Remarks.—Owners do all their own work. Establishment small. Yard contains 14 layaway vats, 4 leaches and 2 limes. Water power.

Baird's Tannery.—William Baird, post office address, Milesburg, Pa.

Production, harness, upper and calf skins ; value of annual product, $2,000 ; number of persons employed, 2 ; cords of hemlock bark used, 10 ; value of same, $40 ; cords of oak bark used, 50 ; value of same, $300 ; domestic hides tanned, 325 ; value of same, $900 ; calf skins tanned, 50 ; value of same, $25.

Remarks.—In operation during the entire year. Tannery is old style, do not use steam; tan in cold liquor; grind bark by horse power; manufacture harness, upper, kip and calf skins; send heavy leather to market in the rough, where it is sold on commission; finish upper and calf skins for home market; have estimated the value of manufactured stock low, not having kept a very strict account.

Joseph Shirk, post office address, Milesburg, Pa.

Number of persons employed, 4; cords of hemlock bark used, 75; value of same, $300; cords of oak bark used, 100; value of same, $600; value of hides tanned, $1,450.

CHESTER COUNTY.

John Gilfillan, post office address, Coatesville, Pa.

Annual product in lbs., 48,000; value of same, $16,000; number of persons employed, 6; cords of oak bark used, 300; value of same, $4,500; domestic hides tanned, 1,500; value of same, $7,500; wages per day paid employees—beam hands, $1 50; yard hands, $1 33⅓; curriers, $1 83⅓.

Remarks.—In operation during the entire year. The tannery is under roof; machinery driven by a 15-horse power engine.

M. B. Chambers, post office address, Marshalton, Pa.

Annual product in lbs., 69,681; value of same, $24,369; number of persons employed, 6; cords of oak bark used, 300; value of same, $3,300; domestic hides tanned, 1,950; value of same, $9,450; calf skins tanned, 2,483; value of same, $4,000; wages per day paid employees—tanners, $1 25; beam hands, $1 85; bark grinders, $1 20; engineers, $1 40; common laborers, $1 20.

Remarks.—In operation during the entire year. The annual production varies; during the present year the chief production will be calf skins; dispose of stock in the rough. The tannery has lately been re-modeled, everything now being under cover; operated principally by steam, though it has also a water power. Number of vats, 58, divided as follows: 6 leaches, 14 handlers, 2 reel handlers, 27 layaways, 4 bates, 3 limes and 2 pools. Buildings heated by steam pipes, and stock all dried in building by steam heat. The water used is of excellent quality for producing a first class stock, and the stock is so rated in the markets. The tannery is located three miles from the Pennsylvania railroad, three miles from the Wilmington and Reading railroad, and five miles from West Chester, the county seat. The bark used is principally from the western counties, the supply in this locality being about exhausted. The supply of hides and skins is ample, and on the increase, so that the annual sales of salted stock will be heavier each year.

CLARION COUNTY.

S. D. Myers, post office address, Callendsburg, Pa.

Annual product, 400 sides; value of same, $1,400; number of persons employed, 3; cords of hemlock bark used, 10; value of same, $60; cords of oak bark used, 14; value of same, $91; domestic hides tanned, 225; value of same, $650; calf skins tanned, 75; value of same, $75.

Remarks.—In operations 8 months during the year.

Craig Tannery.—Joseph Craig, post office address, Limestone, Pa.

Production, harness, upper, kip, calf and sheep skins; annual product in lbs., 4,800; value of same, $3,020; number of persons employed, 3; cords of hemlock bark used, 30; value of same, $150; cords of oak bark used, 30; value of same, $180; domestic hides tanned, 350; value of same, $1,275; calf skins tanned, 150; value of same, $225; sheep skins tanned, 100; value of same, $50.

Remarks.—In operation during 10 months of the year. This establishment is known as "Craig Tannery," and has been in operation 46 years.

CLEARFIELD COUNTY.

Mordecai Shirk, post office address, Clearfield, Pa.

Annual product in lbs., 86,400; value of same, $14,192; number of persons employed, 6; cords of hemlock bark used, 900; value of same, $3,600; cords of oak bark used, 200; value of same, $400; domestic hides tanned, 3,900; value of same, $9,900; calf skins tanned, 500; value of same, $750; wages per day paid employees—tanners, $1 50; beam hands, $1 50; common laborers, $1 00.

Remarks.—This tannery is situated in the borough of Clearfield, Clearfield county, Pa. It contains 5 leeches, 1 cistern, 60 vats; beam house, containing 4 limes, 2 pools and 4 soaks. The bark grinding and pumping and leeches are run by steam with a 25 horse power engine. This report comprises the operation of the tannery for the year ending December 31, 1875, and is as nearly correct as my data will allow me to make it at this time.

W. S. White & Son, post office address, Osceola Mills, Pa.

Production, sole leather; annual product, 30,000 sides; value of same, $165,000; number of persons employed, 33.

Remarks.—Run the whole year round, and pay employees from $1 50 to $2 00 per day for men, and from $75 cents to $1 00 per day for boys.

CLINTON COUNTY.

Beech Creek tannery, M. L. M'Kean, post office address, Beech Creek, Pa.

Production, oak rough leather ; annual product in lbs., 120,000 ; value of same, $33,000 ; number of persons employed, 6 ; cords of hemlock bark used, 40 ; value of same, $210 ; cords of oak bark used, 560 ; value of same, $3,640 ; domestic hides tanned, 3,000 ; wages per day paid employees—tanners, $1 ; fleshers, $1 25 ; engineer, $1 25.

Remarks.—In operation during the entire year.

COLUMBIA COUNTY.

Eckfeldt, & Richie, of Philadelphia, post office address, Sereno, Pa.

Number of persons employed, 6 ; cords of hemlock bark used, 100 ; value of same, $450 ; cords of oak bark used, 300 ; value of same, $2,100 ; domestic hides tanned, (heavy steer,) 1,000 ; value of same, $12,000 ; kip hides tanned, 125 ; value of same, $400 ; calf skins tanned, 100 ; value of same, $200 ; wages per day paid employees—beam hands, $1 75 ; yard hands, $1 50 ; bark grinders, $1 ; common laborers, $1 25.

Remarks.—In operation during 8 months of the year. Tannery is operated by water power. The hides are trimmed or cut into "butts" and offal roundings. Supply their own factory of belting and hose in Philadelphia with leather.

CRAWFORD COUNTY.

Delaney & Brown, post office address, Evansburg, Pa.

Number of persons employed, 1 ; cords of bark used, 55 ; value of same, $220 ; domestic hides tanned, 200 ; value of same, $550 ; calf skins tanned, 250 ; value of same, $3 75.

CUMBERLAND COUNTY.

Jacob Kosh, post office address, Carlisle, Pa.

Production, harness, kip and calf skins ; annual product in lbs., 38,400 ; value of same, $11,520 ; number of persons employed, 4 ; cords of oak bark used, 225 ; value of same, $1,800 ; domestic hides tanned, 1,240 ; value of same, $6,120 ; calf skins tanned, 200 ; value of same, $225 ; wages per day paid employees—beam hands, $1 25 ; yard hands, $1 25.

Remarks.—In operation during entire year.

D. F. Stager, post office address, Mechanicsburg, Pa.

Annual product in lbs., 18,675; value of same, $6,175; number of persons employed, 4; cords of oak bark used, 95; value of same, $902 50; domestic hides tanned, 665; value of same, $2,530; calf skins tanned, 750; value of same, $750; sheep skins tanned, 300; value of same, $75.

Waggoner & Shively, post office address, Newville, Pa.

Production, slaughter leather; annual product in lbs., 30,590; value of same, $10,988; value of calf skins, &c., $2,254; total value of annual product, $13,242; number of persons employed, 5; cords of oak bark used, 225; value of same, 1,600; domestic hides tanned, 1,205; value of same, $4,116; calf skins tanned, 695; value of same, $765; sheep skins tanned, 50; value of same, $12; other hides, 25; value of same, $30; wages per day paid employees—beam hands, $1 25; yard hands, $1 25; bark grinders, $1; curriers, $1 50.

Remarks.—In operation during the entire year.

DAUPHIN COUNTY.

Josiah P. Stine, post office address, Elizabethville, Pa.

Production, oak tanned leather; annual product in lbs., 3,137; value of same, $1,109 25; number of persons employed, 1; cords of oak bark used, 30; value of same, $240; domestic hides tanned, 153; value of same, $405; calf skins tanned, 75; value of same, $90; sheep skins tanned, 25; value of same, $7 25.

Remarks.—In operation during the entire year. Two story tannery building, 30 by 24 feet, in which the tanning is done. Bark is ground by water power; vats consist of 1 lime, 1 bate and 12 layaways.

John S. Lenker, post office address, Elizabethville, Pa.

Production, oak slaughter leather; annual product in lbs., 12,400; value of same, $3,475; number of persons employed, 1; cords of oak bark used, 60; value of same, $480; domestic hides tanned, 450; value of same, $1,445; calf skins tanned, 300; value of same, $300; sheep skins tanned, 50; value of same, $25.

Remarks.—One journeyman tanner is employed, who does the different kinds of work in the tannery. The building is a two story frame, 24 by 24 feet. The lower story is used for beam house and vats, upper story for finishing. There are 16 layaway vats, 3 leachers, 6 handlers, 2 bates and 1 pool. One bark house, containing bark and bark mill; also a leather or drying house, 20 by 16 feet. Bark ground by horse power.

Josiah Matter, post office address, Enders, Pa.

Production, oak slaughter leather; annual product in lbs., 10,000; value of same, $3,500; number of persons employed, 2; cords of oak bark used, 80; value of same, $560; domestic hides tanned, 475; value of same, $2,255; calf skins tanned, 70; value of same, $56; sheep skins tanned, 50; value of same, $25.

Solomon Cassel, post office address, Grantville, Pa.

Production, slaughter, harness, upper, kip and calf skins; annual product in lbs., 18,000; value of same, $5,900; number of persons employed, 2; cords of oak bark used, 100; value of same, $900; domestic hides tanned, 825; value of same, $2,400; calf skins tanned, 300; value of same, $300.

Remarks.—In operation during the entire year.

S. B. Ramberger, post office address, Greytown, Pa.

Number of persons employed, 1; cords of oak bark used, 50; value of same, $400; domestic hides tanned, 340; value of same, $1,650; calf skins tanned, 200; value of same, $250

Conrad Bauer, post office address, Halifax, Pa.

Production, oak slaughter leather; annual product in lbs., 2,400; value of same, $862; number of persons employed, 2.

S. M'Ilhenny, post office address, Linglestown, Pa.

Value of annual product, $4,600; number of persons employed, 3; cords of oak bark used, 100; value of same, $900; domestic hides tanned, 700; value of same, $2,200; calf skins tanned, 300; value of same, $400.

Simon Wert, post office address, Millersburg, Pa.

Production, slaughter leather; value of annual product, $3,044 12; number of persons employed, 1; cords of oak bark used, 65; value of same, $520; domestic hides tanned, 375; value of same, $1,238 75; calf skins tanned, 100; value of same, $170; sheep skins tanned, 25; value of same $12 50.

J. & C. Swab, post office address, Pillow, Pa.

Production, oak slaughter leather; annual product in lbs., 14,051; value of same, $4,480; number of persons employed, 4; cords of oak bark used, 80; value of same, $580; domestic hides tanned, 540; value of same, $1,872; calf skins tanned, 275; value of same, $325.

Remarks.—Tannery small; tan nothing but home slaughter hides, which do not average so large in weight as city hides. Cannot class employees according to directions, as the men we employ all do beam and yard work and currying. Stock generally sent to market in the rough to commission houses. Tan by the old process, using neither steam or water power.

ELK COUNTY.

W. H. Osterhout, post office address, Ridgway, Pa.

Production, hemlock sole leather ; annual product in lbs., 2,500,000 ; value of same at present prices, $600,000 ; number of persons employed, 80 ; cords of hemlock bark used, 12,000 ; value of same, $54,000 ; domestic hides tanned, (California,) 30,000, foreign hides tanned, (Buenos Ayres,) 40,000, total domestic and foreign, 70,000 ; value of same at present prices, $350,000 ; wages per day paid employees — tanners, $1 30 ; beam hands, $1 80 ; yard hands, $1 50 ; rollers and spongers, $1 45 ; bark grinders, $1 25 ; laborers and teamsters, $1 25.

Remarks.—Two foremen, outside and inside, are employed at a salary of $1,000 per year each. This tannery produces hemlock sole leather exclusively, and is said to be one of the best constructed and most convenient in the United States. A large store is run in connection with it.

Grant & Horton, post office address, Ridgway, Pa.

Production, hemlock sole leather ; annual product in lbs., 1,200,000 ; value of same (estimated,) $300,000 ; number of persons employed, 45 to 50 ; cords of hemlock bark used, 6,000 ; value of same, $26,000 ; domestic hides tanned, 8,508 ; value of same, $42,540 ; foreign hides tanned, 20,331 ; value of same, $81,324 ; total domestic and foreign, 28,839 ; total value of same, $123,864 ; wages per day paid employees — beam hands, $1 35 ; yard hands, $1 35 ; rollers and spongers, $1 35 ; bark grinders, $1 25 ; teamsters, $1 25 ; laborers, $1 25.

Remarks.—In operation during the entire year.

Wilcox Tanning Company.—Post office address, Wilcox, Pa.

Production, hemlock sole leather ; annual product in lbs., 4,000,000 ; value of same, $1,000,000 ; number of persons employed, 210 ; cords of hemlock bark used, 22,000 ; value of same, $110,000 ; domestic hides tanned, 5,500 ; value of same, $30,000 ; foreign hides tanned, 100,000 ; value of same, $550,000 ; total domestic and foreign, 105,500 ; total value of same, $580,000 ; wages per day paid employees—tanner (foreman,) $3 30 ; beam hands, $1 50 ; yard hands, $1 50 ; rollers and spongers, $1 50 ; bark grinders, $1 25 ; laborers, $1 25.

Remarks.—In operation during the entire year. In addition to the above employees 200 bark peelers were employed four months of the year, and received each $2 per day for the time employed. The above is the actual working of the tannery from February 1, 1875, to February 1, 1876, in round numbers.

ERIE COUNTY.

C A. Auer, post office address, Corry, Pa.

Production, upper leather; annual product in lbs., 160,000; value of same, $40,000; number of persons employed, 10; cords of hemlock bark used, 500; value of same, $2,500; lbs. of extract used, 1,000; value of same, $600; domestic hides tanned, 2,500; value of same, $24,000; calf skins tanned, 800; value of same, $1,000; wages per day paid employees—beam hands, $1 50; tanners, $1 50; curriers, $2 00; bark grinders, $1 25; laborers, $1 25.

Remarks.—This tannery contains 1 engine of 40-horse power, with 2 tubular boilers, 40 3-inch flues. Building, two story frame. Yard building, 140x34 feet. Beam house, 66x32 feet. Leach house, 54x20 feet. It has 3 leaches and 60 tan vats.

C. E. Gunnison & Co., post office address, Erie, Pa.

Production, slaughter sole, upper and rough leather; value of annual product, $44,140; number of persons employed, 14; cords of hemlock bark used, 500; value of same, $2,500; lbs. of oak extract used, 1,200; value of same, $600; domestic hides tanned, 5,400; value of same, $23,650; calf skins tanned, 1,200; value of same, $1,500; wages per day paid employees—tanners, $1 50; beam hands, $1 50; curriers, $1 50; laborers, $1 25.

Remarks.—In operation during 50 weeks of the year. Are doing a general local business, and send excess of stock to eastern markets in the rough.

S. Y. Rossiter, post office address, Girard, Pa.

Production, rough slaughter leather; annual product in lbs., 76,800; value of same, $19,200; number of persons employed, 4; cords of hemlock bark used, 350; value of same, $1,575; domestic hides tanned, 3,272; value of same, $12,925; calf skins tanned, 120; value of same, $1 25; wages per day paid employees—beam hands, $1 75; curriers, $2 00; tanners, $1 25; laborers, $1.

Remarks.—In operation during the entire year. Tan light stock for upper leather in from two months to ten weeks. The tannery has all the modern improvements known to the trade, and a less number of men are employed than is usual in tanneries without these improvements.

C. & W. C. Smith & Co., post office address, Waterford, Pa.

Production, rough leather and finished kip and calf; value of annual product, $13,000; number of persons employed, 5; cords of hemlock bark used, 250; value of same $1,000; value of extract used, $100; domestic hides tanned, 2,400; value of same, $5,000; calf skins tanned, 1,200; value of same, $1,500; wages per day paid employees—tanners, $2; beam hands, $1 67; yard hands, $1 50; curriers, $2.

Remarks—In operation 280 days during year.

FAYETTE COUNTY.

S. S. Meyers, post office address, Connelsville, Pa.

Production, rough and finished slaughter leather; value of annual product, $2,720; number of persons employed, 2; cords of oak bark used, 100; value of same, $700; domestic hides tanned, 400; calf skins tanned, 200; sheep skins tanned, 100.

FOREST COUNTY.

G. Brooks & Co., post office address, Brookston, Pa.

Production, hemlock sole leather; product from August to December 31, 1875, in lbs., 524,521; value of same, $120,639 83; average number of persons employed, 46; cords of hemlock bark used, 9,113; value of same, $36,452; domestic hides tanned and worked out, 9,776; value of same, 51,795; foreign hides tanned and worked out, 8,645; value of same, $47,664; total domestic and foreign hides, 18,421; total value of same, $99,459; wages per day paid employees—tanners, $3 12; beam hands, $1 73; yard hands, $1 58; rollers and spongers, $1 58; bark grinders, $1 55; engineers, $1 97; loft foreman, $2 00; scrubbers, $1 55; liquor changers, $1 58; carpenters, $1 83; teamsters, $1 50; common laborers, $1 55.

Remarks.—The machinery is run by one engine of 100-horse power, 4 boilers, flues, 24 feet by 4 feet. Have 2 bark mills, 8 leaches, 3 rollers and 276 vats. Commenced work February 1, 1875, with an empty yard. Commenced taking out leather in August following.

FRANKLIN COUNTY.

A. Stiffel, post office address, Greencastle, Pa.

Production, rough slaughter leather; annual product in lbs., 15,727; value of same, $6,720; number of persons employed, 2; cords of oak bark used, 77; value of same, $681; domestic hides tanned, 820; value of same, $2,546; calf skins tanned, 575; value of same, $642 80; sheep skins tanned, 75; value of same, $37 50.

Samuel Zimmerman, post office address, Sylvan, Pa.

Production, slaughter leather; value of annual product, $2,530; number of persons employed, 2; cords of oak bark used, 50; value of same, $250; domestic hides tanned, 350; calf skins tanned, 200; sheep skins tanned, 12.

D. Miller, post office address, Upper Strasburg, Pa.

Production, sole leather, kip and calf skins ; number of persons employed, 4 ; cords of oak bark used, 400 ; value of same, $2,800 ; domestic hides tanned, 1,900 ; calf skins tanned, 120 ; sheep skins tanned, 12.

Remarks.—This establishment has steam power. The engine is 10-horse power. The building was erected in 1874 ; has three tub leaches and sprinklers, and in this respect is complete. The yard is a very old one, provided with 45 vats put in under the old system. Cannot give the value of the hides tanned or of the leather made, as the tanning is done on commission for an other party who furnishes the stock.

FULTON COUNTY.

Geo. W. Skinner & Co., post office address, Big Cove Tannery, Pa.

Remarks.—Tannery and bark sheds were burned down on the 9th of May, 1875. No new stock has been worked in since. Are busy now working out a stock of five thousand sides which were on hand at the time of the fire. As soon as this stock is worked out and new buildings are completed will resume operations. When in full operation will use about 1,200 cords of oak bark, and tan from 8,000 to 10,000 sides of leather. Pay $6 per cord for bark, and use nothing but oak. The leather on hand will amount to 100,000 lbs., and will net about 30 cents per lb.

Saluvia Tannery.—Rowland Austin, post office address, Harrisonville, Pa.

Production, oak sole leather ; annual product in lbs., 120,000 ; value of same, $40,000 ; number of persons employed, 8 ; cords of oak bark used, 900 ; value of same, $6,000 ; domestic hides tanned (Texas,) 2,700 ; value of same, $19,900 ; foreign hides tanned (Buenos Ayres,) 275 ; value of same, $2,550 ; wages per day paid employees—beam hands, $1 50 ; yard hands, $1 00 ; rollers and spongers, $1 50 ; bark grinders, $1 00 ; common laborers, $1 00.

Remarks.—In operation during the entire year. Run by steam power. Capacity, 3,000 to 4,000 hides. Situated at east side of Sideling Hill Mountain, on the Pittsburgh and Chambersburg turnpike, 17 miles from the Southern Pennsylvania railroad, and the same distance from the Huntingdon and Broad Top railroad. Bark supply will be good for many years, and water good and abundant. Erected in 1843.

GREENE COUNTY.

William Cotterrel, post office address, Waynesburg, Pa.

Value of annual product, $20,000 ; number of persons employed, 11 ; cords of oak bark used, 150 ; value of same, $1,050 ; domestic hides tanned, 2,500 ; calf skins tanned, 900 ; wages per day paid employees—beam hands, $1 50 ; yard hands, $1 50 ; curriers and splitters, $1 50 ; finishers, $1 50 ; bark grinders, $1 25 ; common laborers, $1 25.

Remarks.—In operation during the entire year. Tan by old process; grind bark on double mill by horse power; no steam power; have a Richardson splitter, operated by hand power.

Herrington & Son, post office address, Whiteley, Pa.

Value of annual product, $3,000 ; number of persons employed, 3 ; cords of oak bark used, 40 ; value of same, $280 ; domestic hides tanned, 500 ; value of same, $2,100 ; calf skins tanned, 50 ; value of same, $1 50 ; sheep skins tanned, 50 ; value of same, $12 50.

HUNTINGDON COUNTY.

Peter Kean, post office address, Alexandria, Pa.

Production, harness, upper and calf skins ; annual product in lbs., 18,200; value of same, $5,300 ; number of persons employed, 4 ; cords of oak bark used, 120 ; value of same, $840 ; domestic hides tanned, 840 ; value of same, $2,250 ; calf skins tanned, 140 ; value of same, $126 ; sheep skins tanned, 35 ; value of same, $10.

Remarks.—This tannery is engaged in the manufacture of harness, upper leather and calf skins, which are shipped in a rough state to eastern markets.

Austin Green, post office address, Cassville, Pa.

Value of annual product, $1,620 25 ; number of persons employed, 2 ; cords of oak bark used, 40 ; value of same, $240 ; domestic hides tanned, 259 ; value of same, $627 20 ; calf skins tanned, 46 ; value of same, $41 20 ; sheep skins tanned, 60 ; value of same, $18.

Mapleton Tannery.—Jeremiah Bauman, post office address, Mapleton, Pa.

Production, oak sole leather ; annual product in lbs., 240,000 ; value of same, $72,000 ; number of persons employed, 13 ; cords of oak bark used, 1,400 ; value of same, $9,800 ; domestic hides tanned, 6,000 ; value of same, $48,000 ; wages per day paid employees—tanners, (foreman,) $2 88 ; beam hands, $1 40 ; yard hands, $1 35 ; rollers and spongers, $2 ; bark grinders, $1 25 ; engineers, $1 50 ; bark packers, $1 25 ; common laborers, $1 25.

Remarks.—In operation during the entire year. The Mapleton tannery has all the modern improvements ; tanage is claimed to be second to none in the State. Tan nothing but oak sole leather. Water superior and abundant. Situated on line of the Pennsylvania railroad.

Saltillo Tannery.—Leas, M'Vitty & Sons, post office address, Saltillo, Pa.

Production, oak sole leather ; annual product in lbs., 279,000 ; value of same, $104,500 ; number of persons employed, 14 ; tons of oak bark used, 1,875 ; value of same, $13,125 ; domestic hides tanned (Texas and slaughter), 6,700 ; value of same, $46,975 ; wages per day paid employees—beam hands, $1 28 ; yard hands, $1 13 ; rollers and spongers, $1 35 ; bark grinders, $1 04 ; engineers, $1 28 ; common laborers, $1 04.

Remarks.—Other employees are 1 superintendent and 1 foreman. In operation during the entire year. Saltillo tannery is situated in Saltillo borough, on the East Broad Top railroad, 18 miles from Mt. Union, on the Pennsylvania railroad. The buildings are two stories high, of wood and frame structure ; roofs mostly tin ; hide house stone. The tannery was originally built in 1859 ; was burned and rebuilt in 1862. Bark on wagons bought by weight ; on cars by measure. The weighing, when bark is merchantably dry, rids the tanner of all care and vexation on account of bad packing, which is invariably the case with wagon measure.

INDIANA COUNTY.

P. Maher, post office address, Blairsville, Pa.

Production, oak tanned leather ; annual product in lbs., 16,800 ; value of same, $5,040 ; number of persons employed, 3 ; cords of oak bark used, 140 ; value of same, $980 ; domestic hides tanned (all kinds,) 700 ; value of same, $2,940.

Remarks —Our capacity is forty hides per week, but owing to the dullness of trade and the shrinkage in prices of leather since the "panic" have not been working more than one-third that number. This report is merely an average, as minute accounts have not been kept. The men employed work in common at beam and yard labor, bark grinding, running engine, &c., and cannot therefore be properly classified. The wages of two of the "hands" amounted to about forty dollars per month each, while the third hand (who is the proprietor) was perfectly willing to take the profits of the business as his share for wages, though they were comparatively small.

Charles Kerler, post office address, Blairsville, Pa.

Production, oak tanned leather ; annual product in lbs., 24,000 ; value of same, $6,000 ; number of persons employed, 2 ; cords of oak bark used, 125 ; value of same, $1,000 ; domestic hides tanned (all kinds,) 850.

Nicholas Peddicord, post office address, Brush Valley, Pa.

Number of persons employed, 1 ; cords of oak and hemlock bark used, 40 ; value of same, $230 ; domestic hides tanned (all kinds,) 210 ; value of same, $630.

J. Rea, post office address, Saltsburg, Pa.

Value of annual product, $1,500 ; number of persons employed, 1 ; cords of oak bark used, 30 ; value of same, $280 ; domestic hides tanned (all kinds,) 325.

JUNIATA COUNTY.

John Shell, post office address, Cocolamus, Pa.

Production, rough leather, kip and calf skins ; annual product in lbs., 12,600 ; number of persons employed, 2 ; cords of oak bark used, 100 ; value of same, $550 ; domestic hides tanned, 550 ; value of same, $1,587 50 ; calf skins tanned, 100 ; value of same, $110.

Remarks.—Tannery 36x40 feet, 16 layaway vats, 4 leaches, 2 limes, 1 bate and 1 pool. Running water, with good water power for grinding bark, pumping, &c.

Jacob Smith, post office address, M'Alisterville, Pa.

Production, slaughter leather ; value of annual product, $11,175 ; number of persons employed, 4 ; cords of oak bark used, 250 ; value of same, $1,500 ; domestic hides tanned, 1,500 ; value of same, $5,600 ; calf skins tanned, 150 ; value of same, $225 ; sheep skins tanned, 100 ; value of same, $40.

Remarks.—In operation during the entire year. The capacity of the tannery is as follows : 10 handles, 27 layaways and 4 leaches

William G. Winey, post office address, Richfield, Pa.

Production, rough slaughter ; annual product in lbs., 5,450 ; number of persons employed, 2 ; cords of oak bark used, 130 ; value of same, $780 ; domestic hides tanned, 519.

Remarks.—Tan on commission, and cannot therefore give value of leather or hides. Tannery building 30 feet by 45 feet, two stories high ; bark house, 22 feet by 60 feet. There are 11 vats inside the building and 27 in the yard outside. Run by water power.

Jacob S. Bascom, post office address, Richfield, Pa.

Production, rough slaughter, upper, kip and calf skins ; annual product in lbs., 5,000 ; value of same, $2,500 ; number of persons employed, 2 ; cords of oak bark used, 35 ; value of same, $210 ; domestic hides tanned (all kinds,) 200 ; value of same, $614.

Remarks.—In operation during the entire year. Tannery building, 40 feet by 25 feet, two stories high. Yard contains 19 vats. Use horse power for grinding bark.

Solomon Lieber, post office address, Thompsontown, Pa.

Production, kip, calf skins and sheep skins; value of annual product, $900; number of persons employed, 1; cords of oak and hemlock bark used, 17; value of same, $107; domestic hides tanned (all kinds,) 195; value of same, $456 25.

LANCASTER COUNTY.

Sensenich Tannery.—G. W. Sensenich, post office address, Beartown, Pa.

Production, slaughter leather; annual product in lbs., 8,914; value of same, $4,208 64; number of persons employed, 3; cords of oak bark used, 70; value of same, $690; domestic hides tanned, 475; value of same, $1,815; calf skins tanned, 400; value of same, $580; sheep skins tanned, 50; value of same, $25; horse hides tanned, 20; value of same, $25.

Remarks.—Tan by the old process. No steam. Grind bark by horse power, and pump the leaches by hand. Have a good stream of water. The business is principally tanning and finishing harness, upper and calf skins, with a few sheep skins and horse hides for retail trade at home. Send some slaughter in the rough to Philadelphia. The supply of hides comes from butchers and farmers in the county. Employees do all the work in common, and cannot therefore be classified in a very satisfactory way.

Henry Hollinger, post office address, Columbia, Pa.

Production, harness, calf skins and sheep skins; annual product in lbs., 92,090; value of same, $35,175; number of persons employed, 11; cords of oak bark used, 350; value of same, $3,850; domestic hides tanned, 2,600; value of same, $14,500; calf skins tanned, 204; value of same. $204; sheep skins tanned, 996; value of same, $600; wages per day paid employees—tanners, $1 50; curriers, $1 66; finishers, $1 50; engineers, $2; common laborers, 90 cents.

Remarks.—Heavy stock all finished into harness leather. Calf skins are generally sold in the rough, but finish a portion of them.

John Dohner, post office address, Elizabethtown, Pa.

Production, harness, upper, kip and calf skins; annual product in lbs., 38,220; value of same, $13,112 50; number of persons employed, 7; cords of oak bark used, 125; value of same, $1,250; domestic hides tanned, 1,215; value of same, $4,700; calf skins tanned, 500; value of same, $500; sheep skins tanned, 25; value of same, $15.

Remarks.—In operation during the entire year. The manufacture and finishing of harness have been a specialty for a number of years, and within the last three years the same attention has been given to the manufacture and finishing of upper, kip and calf skins.

Amos Hollinger, post office address, Lancaster, Pa.

Production, finished oak harness; annual product in lbs., 146,000; value of same, $51,100; number of persons employed, 16; tons of oak bark used, 500; value of same, $6,000; gallons of oil used, 2,500; value of same, $1,750; lbs. of tallow used, 12,000; value of same, $1,000; domestic hides tanned, 3,000; value of same, $18,000; sides of rough leather curried (additional,) 3,000; value of same, $12,592; wages per day paid employees—tanners, $1 50; curriers, $1 50; scourers and yard hands, $1 25; clerks, $2 16; engineers, $1 75; bark grinders, $1 00; teamsters, $1 00.

Remarks.—The tannery buildings consist of a two-story engine and bark mill house; a three-story building, the upper stories used for currying, and the lower one for beam work; a one-story boiler house and a large drying loft over the yard. The yard contains 8 leaches, 12 handlers and 70 layaway vats. The establishment is devoted excusively to the manufacture of oak harness leather of all kinds. In operation 50 weeks during the year.

Michael Haberbush, post office address, Lancaster, Pa.

Production, oak harness; annual product in lbs., 48,000; value of same, $16,800; number of persons employed, 6; cords of oak bark used, 200; value of same, $2,500; domestic hides tanned, 1,500; value of same, $3,360; wages per day paid employees—tanners, $1 50; beam hands, $1 50; yard hands, $1 50; curriers, $1 75.

Remarks.—In operation during the entire year.

W. H. Miller, post office address, New Providence.

Production, harness and calf skins; annual product in lbs., 16,600; value of same, $6,350; number of persons employed, 3; cords of oak bark used, 130; value of same, $1,040; domestic hides tanned, 400; value of same, $1,200; calf skins tanned, 200; value of same, $160.

Remarks.—Yard contains 24 vats. Grind bark by steam power. Have an engine of 6-horse power.

Isaac W. Leidigh, post office address, Paradise, Pa.

Production, rough slaughter for harness, belting and shoe skirting; annual product in lbs., 32,480; value of same, $10,606 40; number of persons employed, 5; cords of oak bark used, 160; value of same, $1,920; domestic hides tanned, 1,120; value of same, $4,838; calf skins tanned, 300; value of same, $375; wages per day paid employees—beam hands, $1 63; yard hands, $1 50; bark grinders, 60 cents; curriers, $1 66⅔.

LEBANON COUNTY.

William Beaver, post office address, Annville, Pa.

Production, slaughter leather and calf skins ; number of persons employed, 4 ; cords of oak bark used, 200 ; value of same, $2,000 ; domestic hides tanned, 1,500 ; value of same, $6,600 ; calf skins tanned, 700 ; value of same, $7 78 ; wages per day paid employees — beam hands, $1 65 ; yard hands, $1 50 ; curriers, $1 65.

David Buck, post office address, Ono, Pa.

Annual product in lbs., 12,300 ; value of same, $3,900 ; number of perployed, 3 ; cords of oak bark used, 60 ; value of same, $720 ; domestic hides tanned, 650 ; value of same, $1,875 ; calf skins tanned, 200 ; value of same, $200.

Josiah S. Light, post office address, Fredericksburg, Pa.

Annual product in lbs., 10,500 ; value of same, $3,300 89 ; number of persons employed, 3 ; cords of oak bark used, 70 ; value of same, $700 ; domestic hides tanned, 420 ; calf skins tanned, 250 ; sheep skins tanned, 20.

Remarks.—In operation during the entire year. Employees receive $1 per day each.

J. & H. Loose, post office address, Myerstown, Pa.

Value of annual product, $14,601 37 ; number of persons employed, 5 ; cords of oak bark used, 241 ; value of same, $2,410 ; domestic hides tanned, 1,427 ; value of same, $6,610 66 ; calf skins tanned, 955 ; value of same, $1,292 99 ; sheep skins tanned, 85 ; value of same, $29 55 ; horse hides tanned, 29 ; value of same, $43 50.

Remarks. — Leather generally sold in the rough, though some harness, kip and calf skins are finished.

LEHIGH COUNTY.

Mosser & Grim, post office address, Allentown, Pa.

Production, sole leather and calf skins ; annual product in lbs., 186,255 ; value of same, $62,151 40 ; number of persons employed, 19 ; cords of oak bark used, 150 ; value of same, $1,350 ; cords of hemlock bark used, 1,300 ; value of same, $11,700 ; total value of bark used, $13,050 ; domestic hides tanned, 7,852 ; value of same, $10,380 ; calf skins tanned, 2,200 ; value of same, $2,200 ; wages per day paid employees — foremen, $2 77 ; beam hands, $2 ; yard hands, $1 62 ; rollers and spongers, $2 56 ; curriers, $2 66 ; bark grinders, $1 66 ; engineers, $1 53 ; common laborers, $1 25.

Charles Burkhalter, post office address, Dillingersville, Pa.

Annual product in lbs., 7,200; value of same, $3,318; number of persons employed, 2; cords of oak bark used, 70; value of same, $630; domestic hides tanned, 300; value of same, $1,080; calf skins tanned, 200; value of same, $264.

A. D. Kachline, post office address, Egypt, Pa.

Production, harness, calf skins and sheep skins; number of persons employed, 2; cords of oak bark used, 80; value of same, $800; domestic hides tanned, 770; value of same, $2,810; calf skins tanned, 200; value of same, $200; sheep skins tanned, 80; value of same, $20.

John E. Dubbs, post office address, Locust Valley, Pa.

Production, rough slaughter leather; number of persons employed, 2; cords of oak bark used, 125; value of same, $1,250; domestic hides tanned, 600; value of same, $2,160; calf skins tanned, 300; value of same, $350.

Remarks.—Stock when tanned, is generally sold in the rough.

James Singmaster, post office address, Macungie, Pa.

Production, slaughter leather and calf skins; value of annual product, $8,251 16; number of persons employed, 4; cords of oak bark used, 200; value of same, $2,000; domestic hides tanned, 1,453; value of same, $5,602 09; calf skins tanned, 762; value of same, $1,076 41; wages per day paid employees—tanners, $1 45; curriers, $1 50; bark grinders, 75 cents.

Remarks.—In operation during the entire year.

LUZERNE COUNTY.

James Davis & Co., post office address, Pittston, Pa.

Annual product in lbs., 106,600; value of same, $32,000; number of persons employed, 6; cords of bark used, 600; value of same, $3,825; domestic hides tanned, 3,000; value of same, $17,550.

Remarks.—In operation during the entire year. Tannery contains 32 layaway vats and handlers, 6 leaches, 3 limes and 3 soaks; 1 steam engine of 20-horse power, with 2 boilers; ovens ten feet from tannery in a fire proof building; use wet tan for fuel. When running to full capacity can turn out 100 hides per week.

Beaver Run Tanning Company, post office address, Ruggles, Pa.

Production, Union crop sole; annual product in lbs., 145,000; value of same, $40,600; number of persons employed, 9; cords of oak bark used, 810; value of same, $4,050; cords of hemlock bark used, 90; value of same, $540; domestic hides tanned, 3,540; value of same, $21,600; wages per day paid employees—tanners, $2; beam hands, $1 50; yard hands,

$1 25 ; rollers and spongers, $1 50 ; bark grinders, $1 25 ; common laborers, $1 25.

Remarks.—In operation during the entire year. Use steam power ; tannery has a capacity of 12,000 sides a year.

A. B. M'Kinstry, post office address, Schultzville, Pa.

Production, Union crop sole leather ; annual product in lbs., 600,000, value of same, $180,000 ; number of persons employed, 33 ; cords of hemlock bark used, 2,403 ; value of same ; $15,000 ; cords of oak bark used, 215 ; value of same, $1,300 ; total value of bark used, $16,300 ; domestic hides tanned, (green salted) 20,000 ; value of same, $100,000 ; wages per day paid employees—beam hands, $1 50 ; yard hands, $1 35 ; fleshers, $1 35 ; rollers, $1 50 ; spongers, $1 15 ; bark grinders, $1 15 ; common laborers, $1 15.

Remarks.—In operation all the year ; tan Union crop sole leather which is all sold in the New York market. Hemlock liquors used and laid away dusted with oak bark.

LYCOMING COUNTY.

W. Hess & Co., post office address, Elimsport, Pa.

Value of annual product, $1,445 ; cords of bark used, 50 ; value of same, $290 ; domestic hides tanned, 145 ; calfskins tanned, 80 ; sheepskins tanned, 60 ; foregn hides tanned (Buenos Ayres,) 20.

Remarks.—Use no steam in tanning, and do only a home business.

Hardenburg, Hartwell & Co., post office address, English Centre, Pa.

Production, sole leather ; annual product in lbs., 700,000 ; value of same, $175,000 ; number of persons employed, 35 ; cords of hemlock bark used, 3,500 ; value of same, $17,500 ; domestic hides tanned, 10,000 ; value of same, $40,000 ; foreign hides tanned, 10,000 ; value of same, $40,000.

Remarks.—Employees work 9½ hours and receive on an average $1 35 per day. Tannery is known as the Kingston Tannery ; was built in 1869, and has been operated to its full capacity since it was started.

J. A. Webb, post office address, Muncy, Pa.

Production, upper, harness and calfskins ; number of persons employed, 4 ; cords of hemlock bark used, 20 ; value of same, $80 ; cords of oak bark used, 40 ; value of same, $240 ; domestic hides tanned, 500 ; value of same, $1,600 ; calfskins tanned, 200 ; value of same, $200 ; sheepskins tanned, 100 ; value of same, $50.

Remarks.—Tannery building is 100x36 feet ; yard contains 25 vats.

Charles Kelchner, post office address, Muncy.

Cords of oak bark used, 25 ; value of same, $165 ; domestic hides tanned, 170 ; value of same, $450 ; calfskins tanned, 100 ; value of same, $100.

Remarks.—Work all done by one man.

E. R. Wilkison, post office address, Newberry, Pa.

Annual product in lbs., 6,723 ; value of same, $2,017 ; number of persons employed, 3 ; cords of hemlock bark used, 30 ; value of same, $150 ; cords of oak bark used, 50 ; value of same, $350 ; domestic hides tanned, 292 ; value of same, $1,200.

Love & Russell, post office address, Williamsport, Pa.

Production, slaughter leather ; annual product in lbs., 17,000 ; value of same, $5,928 68 ; number of persons employed, 3 ; cords of hemlock bark used, 40 ; value of same, $200 ; cords of oak bark used, 60 ; value of same, $450 ; domestic hides tanned, 711 ; value of same, $2,464 93.

Remarks.—In operations 8 months during the year.

William Updegraff, post office address, Williamsport.

Production, slaughter leather ; annual product in lbs., 20,599 ; value of same, $5,520 44 ; number of persons employed, 4 ; cords of hemlock bark used, 45 ; value of same, $225 ; cords of oak bark used, 65 ; value of same, $455 ; domestic hides tanned, 836 ; value of same, $2,875 19.

Remarks.—In operation during 8 months of the year.

MIFFLIN COUNTY.

William R. M'Kee & Co., post office address, Lewistown, Pa.

Production, rough slaughter leather and calf skins ; annual product in lbs., 45,000 , value of same, $12,000 ; number of persons employed, 3 ; cords of oak bark used, 150 ; value of same, $1,050 ; domestie hides tanned, 1,500 ; value of same, $7,200 ; calf skins tanned, 200 ; value of same, $200.

Remarks.—Employees receive $1 25 per day each.

Spanogle & Pamubaker, post office address, Lewistown, Pa.

Annual product in lbs., 412,089 ; value of same, $145,805 71 ; number of persons employed, 24 ; cords of hemlock bark used, 100 ; value of same, $700 ; cords of oak bark use, 2,800 ; value of same, $23,800.

Remarks.—Tannery building of brick, roofed with slate. Machinery propelled by steam. Beam hands and rollers and spongers are paid by the side. Beam hands receive 9 cents per side ; rollers and spongers 4½ cents per side ; yard hands, $1 25 per day.

A. T. Hilands & Co., post office address, Milroy, Pa.

Production, rough, sole, harness, upper and calf skins ; annual product in lbs., 21,804 ; value of same, $6,539 ; number of persons employed, 2 ; cords of hemlock bark used, 20 ; value of same, $80 ; cords of oak bark used, 100 ; value of same, $700 ; domestic hides tanned, 811 ; value of same, $3,457 37 ; calf skins tanned, 142 ; value of same, 189.

Remarks.—In operation during the entire year. The power used for grinding bark and pumping is obtained from a mountain stream. Water wheel is a forty-two inch turbine. The bulk of the stock manufactured is rough leather, and is sold in the Philadelphia and Baltimore markets. Sole, harness, upper and calf skins are only manufactured to supply home custom. Owing to the depression in trade during the last two years the tannery has not been run to its full capacity. The employees do not work at any one branch of the trade, but do all the work usual in a tannery of its kind in common.

MONROE COUNTY.

Charles E. Kistler, post office address, Sciota, Pa.

Production, union sole leather ; annual product in lbs., 378,488 ; value of same, $116,212 65 ; number of persons employed, 22 ; cords of hemlock bark used, 2,500 ; value of same, $20,000 ; cords of oak bark used, 350 ; value of same, $2,250 ; total value of bark used, $22,250 ; domestic hides tanned, 10,394 ; value of same, $69,431 ; wages per day paid employees—tanners, $2 ; beam hands, $1 40 ; yard hands, $1 30 ; rollers and spongers, $1 30 ; bark grinders, $1 ; clerks, $1 ; teamsters, $1 ; common laborers, $1 25.

Remarks.—In operation during the entire year. This tannery makes union sole leather, and is located 9 miles from Stroudsburg, which is the nearest railroad station. The foregoing figures are the net value of the leather when shipped from the tannery, and the cost of the hides at the place of purchase. Ordinary expenses, such as repairs, freight, cartage, insurance and taxes are not included in the report The employees of the establishment are paid monthly in cash.

MONTGOMERY COUNTY.

John C. Morgan, post office address, Fairview Village, Pa.

Production, harness, upper and calf skins ; annual product in lbs., 19,600 ; value of same, $8,000 ; number of persons employed, 3 ; cords of hemlock bark used, 40 ; value of same, $400 ; cords of oak bark used, 70 ; value of same, $625 ; domestic hides tanned, 582 ; value of same, $2,420 ;

calf skins tanned, 931; value of same, $1,500; wages per day paid employees—tanners, $1 40; curriers, $1 75.

Remarks.—In operation during the entire year. Use horse power for grinding bark. No artificial heat. Sell leather at retail and wholesale. A few hides are tanned on commission.

D. M Casselberry, post office address, Lower Providence, Pa.

Production, light slaughter, kip and calfskins; value of annual product, $8,000; number of persons employed, 3; cords of hemlock bark used, 50; value of same, $4 50; cords of oak bark used, 100; value of same, $1,000; domestic hides tanned, 800; value of same, $2,800; calfskins tanned, 1,300; value of same, $2,000; wages per day paid employees—tanners, $1 30; curriers, $1 25.

Remarks—Small tannery-building over the vats; steam power. This tannery has been in operation for one hundred years, but if the business does not improve, will scarcely be kept open for another century.

William T. Miller, post office address, Trappe, Pa.

Production, calfskins; value of annual product, $4,500; number of persons employed, 1; cords of oak bark used, 40; value of same, $480; calfskins tanned, 2,000.

Remarks.—This is a small tannery with 9 layaway vats and 5 handlers.

MONTOUR COUNTY.

James Woodside, post office address, Danville, Pa.

Annual product in lbs., 25,800; value of same, $9,250; number of persons employed, 4; cords of oak bark used, 125; value of same, $1,000; domestic hides tanned, 900; value of same, $3,560; calfskins tanned, 800; value of same, $1,200; sheepskins tanned, 300; value of same, $90.

Remarks —Tannery building is a two-story frame, with engine house attached. Power supplied by a steam engine of 10-horse power; 30 vats, 12 of which are under roof and 18 outside.

W. D. Weidenhamer, post office address, Limestoneville, Pa.

Production, slaughter leather; annual product in lbs., 8,000; value of same, $5,000; number of persons employed, 2; cords of oak bark used, 30; value of same, $210; lbs. of extract used, 1,000; value of same, $50; domestic hides tanned, 750; value of same, $2,450; calf skins tanned, 500; value of same, $500; sheep skins tanned, 200; value of same, $100.

Remarks.—Tan by laying down in bark, using cold liquor. The strength of the bark is extracted in the leaches by hot liquor, which stands until it gets cold before it is used. Use no acids or other ingredients to swell the hides or hasten the process of tanning, believing that such practices are injurious to the leather.

NORTHAMPTON COUNTY.

Ephraim Loux, post office address, Nazareth, Pa.

Production, slaughter leather and calf skins; value of annual product, $3,000; number of persons employed, 2; cords of oak bark used, 60; value of same, $480; domestic hides tanned, 400; value of same, $1,175; calf skins tanned, 225; value of same, $300; sheep skins tanned, 50; value of same, $12.

Remarks.—In operation during the entire year. Grind bark by horse power; yard contains 27 vats, part of them under cover.

George Fulmer, post office address, Portland, Pa.

Production, Union crop sole leather; annual product in lbs., 420,000; value of same, $120,000; number of persons employed, 23; cords of hemlock bark used, 1,860; value of same, $16,740; cords of oak bark used, 250; value of same, $2,250; domestic hides tanned, 12,000; value of same, $89,000.

Remarks.—The twenty-three employees include beam hands, yard hands, loft hands, bark grinders, firemen, &c., and they receive an average of $1 40 per day each. Last year was not a profitable one for the tanning business, the prices of hides being too high and leather too low, but prospects for the present year are somewhat brighter.

Michael Weaver, post office address, Stockertown, Pa.

Production, oak sole leather; annual product in lbs., 100,000; value of same, $27,000; number of persons employed, 4; cords of oak bark used, 450; value of same, $3,600; domestic hides tanned, 3,000; value of same, $16,200; wages per day paid employees—beam hands, $1 25; yard hands, $1 25; rollers and spongers, $1 25.

NORTHUMBERLAND COUNTY.

S. M'Ninch & Co., post office address, Pottsgrove, Pa.

Production, slaughter leather; value of annual product, $6,000; number of persons employed, 3; cords of oak bark used, 100; value of same, $900; domestic hides tanned, 500; value of same, $2,000; calfskins tanned, 300; value of same, $450; sheepskins tanned, 100; value of same, $300;

Remarks.—Use steam power for grinding bark and pumping liquor. Tannery has not been run to full capacity, as the business has not been profitable. Leather sold in the rough in the New York market.

PERRY COUNTY.

George Hench, post office address, Carlisle, Pa. Tannery at Centre, Perry county.

Production, oak sole leather; annual product in lbs., 124,800; value of same, $46,176; number of persons employed, 7; cords of oak bark used, 700; value of same, $4,200; foreign hides tanned, 2,600; value of same, $19,000; wages per day paid employees—beam hands, $1 35; yard hands, $1 25; rollers and spongers, $1 50; bark grinders, $1 25; common laborers, $1 00.

Remarks.—In operation during the entire year. This tannery is an old one re-modeled, with steam power, Allen and Warner sprinklers or leaching cisterns, train way and all modern improvements. It is located at Centre, Perry county, 18 miles from Newport station, on the Pennsylvania railroad, and is in a good bark region. It has been in operation over sixty years, and has changed owners three times. The *Shoe and Leather Reporter*, of June 29, 1876, in noticing the exhibit of this tannery, says: "The tannage of George Hench, formerly president of the Pennsylvania Tanners' Association, is also shown by this firm (Pritchett, Baugh & Co.) This is Spanish sole, well tanned and of good color, fair fleshed leather and a good display."

Joseph Howell & Co., post office address, Millerstown, Pa.

Production, oak sole leather; annual product in lbs., 200,000; value of same, $70,000; number of persons employed, 10; cords of oak bark used, 1,600; value of same, $11,000, domestic hides tanned, 2,000; value of same, $14,000; foreign hides tanned, 3,000; value of same, $22,500; wages per day paid employees—tanners (foreman,) $4; beam hands, $1 50; yard hands, $1 50; rollers and spongers, $1 50; bark grinders, $1 20; common laborers, $1 15.

Remarks.—Rock Oak Tannery, at Millerstown, Pa., is a first-class establishment, built and furnished with the most approved machinery and arrangements, and in it is produced the highest grade of sole leather, which has a constant market in Philadelphia and Baltimore. It is capable of being run up to nearly double the stated capacity when the state of the trade will justify. It is usually in operation every working day in the year.

John A. Bechtel & Son, post office address, Newport, Pa.

Production, oak sole leather; annual product in lbs., 425,000; value of same, $150,000; number of persons employed, 16; cords of oak bark used, 2,400; value of same, $19,200; domestic hides tanned, 11,000; wages per day paid employees—beam hands, $1 50; yard hands, $1 25; rollers and spongers, $1 50; bark grinders, $1 10; engineers, $1 10; common laborers, $1 10.

Remarks.—In operation during the entire year.

PHILADELPHIA.

Chas. B. Williams & Sons, address, 1620 North Fifth street, Philadelphia, Pa.

Production, oak sole leather; annual product in lbs., 162,000; value of same, $57,000; number of persons employed, 14; cords of oak bark used, 700; value of same, $10,000; domestic hides tanned, 4,500; value of same, $30,000.

Remarks—In operation during the entire year.

Keen & Coates, address, 943 North Front street, Philadelphia, Pa.

Production, oak sole leather; annual product in lbs., 400,000; value of same, $148,000; number of persons employed, 24; cords of oark bark used, 2,000; value of same, $30,000; domestic hides tanned, 8,340; value of same, $62,000.

Remarks.—In operation during the entire year. Capacity of tannery 10,000 hides, but owing to a fire last year only 8,340 were worked in.

Wm. F. Forepaugh, Jr., & Bros., post office address, Philadelphia, Pa.

Production, belting and hose leather; value of annual product, $80,000; number of persons employed, 20.

Remarks.—Tan whole hides for belting and also manufacture belts; leather sold in the rough without rolling; tan from 5,000 to 6,000 hides per year, and work ten hours a day, from 7 A. M., to 6 P. M., the year round. In winter, light up with gas. Beam hands receive $12 per week, yard hands $9 per week, rollers and spongers $10 per week, and bark grinders $9 per week.

Beeson & Crawford, address, 1311 North Sixth street, Philadelphia, Pa.

Production, oak sole leather; number of persons employed, 4; cords of oak bark used, 250; value of same, $3,750; domestic hides tanned, 1,800; value of same, $10,500.

Remarks.—Tan all steer hides for sole leather. On account of the dullness of the leather trade, have not been working in the usual number of hides. Employ only four men at present, who work in common at the different branches of the trade, and receive $1 67 each per day.

SCHUYLKILL COUNTY.

A. Gensemer & Co., post office address, Ringtown, Pa.

Annual product in lbs., 115,500; value of same, $34,650; number of persons employed, 7; cords of oak bark used, 600; value of same, $6,000.

Remarks.—Employees receive from $1 25 to $2 per day each. Hours of labor in summer, 10 hours, and in winter, 9 hours.

P. M. Barrow, post office address, Ringtown, Pa.

Production, slaughter leather, kip and calf skins ; annual product in lbs., 30,000 ; value of same, $9,000 ; number of persons employed, 3 ; cords of hemlock bark used, 25 ; value of same, $150 ; cords of oak bark used, 110 ; value of same, $880 ; domestic hides tanned, 1,400 ; value of same, $5,700 ; calf skins tanned, 300 ; value of same, $300 ; sheep skins tanned, 50 ; value of same, $15.

Remarks.—Tannery situated at Ringtown, a small village in the northern part of Schuylkill county, in the anthracite coal basin, or rather in a red shale valley, surrounded by large deposits of coal. The valley is productive ; the supply of bark is only moderately good.

SNYDER COUNTY.

Ulrich & Bro., post office address, Selinsgrove, Pa.

Production, slaughter leather; annual product in lbs., 3,800; value of same, $1,439 ; number of persons employed, 2 ; cords of oak bark used, 20 ; value of same, $140 ; domestic hides tanned, 198 ; value of same, $752 ; calf skins tanned, 100 ; value of same, $100.

SOMERSET COUNTY.

Smith & Jefferys, post office address, Addison, Pa.

Production, sole, harness, upper, calf and sheep skins ; annual product in lbs., 12,000 ; value of same, $3,000 ; number of persons employed, 2 ; cords of oak bark used, 104 ; value of same, $620 ; domestic hides tanned, 360 ; value of same, $1,050 ; foreign hides tanned, 15 ; value of same, $100 ; calf skins tanned, 200 ; value of same, $200 ; sheep skins tanned, 50 ; value of same, $25.

Remarks.—Tannery building is 60 feet by 45 feet, and is two stories high. Power is furnished by a 20-horse power engine. Have a sole leather roller, and the yard contains 27 vats.

Jehu M'Millen, post office address, Addison, Pa.

Production, slaughter leather ; number of persons employed, 2 ; cords of oak bark used, 40 ; value of same, $200 ; domestic hides tanned, 150 ; value of same, $600 ; calf skins tanned, 75 ; value of same, $90 ; sheep skins tanned, 50 ; value of same, $20.

Remarks.—Small country tannery with 20 vats, each 8 feet by 7 feet and 5 feet deep. Water power is used for grinding bark and pumping.

H. L. Dean & Bro., post office address, Addison, Pa.

Production, slaughter leather; number of persons employed, 3; cords of oak bark used, 30; value of same, $180; domestic hides tanned, 100; value of same, $300; calf skins tanned, 75; value of same, $120; sheep skins tanned, 500; value of same, $350.

J. W. Sullivan, post office address, King Wood, Pa.

Production, slaughter leather; number of persons employed, 1; cords of oak bark used, 15; value of same, $90; domestic hides tanned, 65; value of same, $170; calf skins tanned, 50; value of same, 40.

Remarks.—Small yard containing 12 vats.

J. R. M'Millen & Sons, post office address, New Lexington, Pa.

Production, sole, harness, upper, kip and calf skins; annual product in lbs., 20,000; value of same, $8,000; number of persons employed, 3; cords of oak bark used, 150; value of same, $900; domestic hides tanned, 800; value of same, $3,200; calf skins tanned, 500; value of same, $500.

Remarks.—Tan by old process, with bark and in cold liquor. No steam about the yard. Most of the leather is finished and sold at retail at home.

Jonathan Miller, post office address, Sipesville, Pa.

Production, sole, upper, kip, calf and sheep skins; value of annual product, $4,000; cords of oak bark used, 125; value of same, $687; domestic hides tanned, 500; value of same, $1,700; calf skins tanned, 300; value of same, $300; sheep skins tanned 100; value of same, $50.

Jeremiah Wingert, post office address, Wellersburg, Pa.

Production, upper, kip, calf and sheep skins; value of annual product, $5,600; number of persons employed, 5; cords of hemlock bark used, 25; value of same, $115; cords of oak bark used, 120; value of same, $700; domestic hides tanned, 640; value of same, $2,520; calf skins tanned, 300; value of same, $300; sheep skins tanned, 100; value of same, $30.

Remarks.—Yard contains 34 vats; no steam; use horse power for grinding bark.

SUSQUEHANNA COUNTY.

C. S. Foster, post office address, Montrose, Pa.

Production, rough, upper and calf skins; annual product in lbs. 9,600; value of same, $2,270; number of persons employed, 1; cords of hemlock bark used, 50; value of same, $250; domestic hides tanned, 400; value of same, $1,100; calf skins tanned, 200; value of same, $160.

A. Corbin & Co., post office address, New Milford, Pa.

Production, hemlock sole leather; annual product in lbs. 437,400; value of same, $100,070; number of persons employed, 16; cords of hemlock bark used, 2,200 ; value of same, $11,550 ; foreign hides tanned, (South American,) 11,773 ; value of same, $66,670 87.

Wages per day paid employees : Tanners, $1 50 ; beam hands, $1 50 ; rollers and spongers, $1 50 ; bark grinders, $1 00 ; common laborers, $1 25.

Jasper G. Stiles, post office address, Gibson, Pa.

Production, rough upper leather ; annual product in lbs., 36,000 ; value of same, $9,000 ; number of persons employed, 2 ; cords of hemlock bark used, 150 ; value of same, $750 ; domestic hides tanned, 1,500 ; value of same, $6,000.

Remarks.—Employees receive $1 50 per day each.

H. Jenkins & Son, post office address, Thompson, Pa.

Production, harness, upper, kip and calf skins ; value of annual product, $5,000 ; number of persons employed, 5 ; cords of hemlock bark used, 75 ; value of same, $375 ; cords of oak bark used, 7 ; value of same, $56 ; domestic hides tanned, 500 ; value of same, $1,600 ; calf skins tanned, 200 ; value of same, $250.

Remarks.—Hands all work in common, and cannot therefore be classified.

TIOGA COUNTY.

Harkness & Rockwell, post office address, Cherry Flats, Pa.

Production, kip and calf skins ; annual product in lbs., 2,200 ; value of same, $975 ; number of persons employed, 2 ; cords of hemlock bark used, 40 ; value of same, $120 ; domestic hides tanned, 150 ; value of same, $450 ; calf skins tanned, 100 ; value of same, $125.

Remarks.—Tannery building 74 by 26 feet ; grind bark by water power ; yard contains 1 lime, 1 bate, 1 leach and 17 layaway vats.

F. Cook & Son, post office address, Gaines, Pa.

Production, hemlock sole leather ; annual product in lbs., 360,000 ; value of same, $90,000 ; number of persons employed, 15 ; cords of hemlock bark used, 1,500 ; value of same, $6,000 ; foreign hides tanned, 10,000 ; value of same, $50,000.

Remarks.—This establishment is known as the "Pine Creek Tannery," and has been in operation four years. It is located on Pine creek, fifteen miles from Wellsboro', the county seat of Tioga county.

G. A. Veil, post office address, Liberty, Pa.

Production, harness, upper, kip and calf skins ; annual product in lbs., 12,000 ; value of same, $3,000 ; number of persons employed, 2 ; cords of hemlock bark used, 100 ; value of same, $350 ; domestic hides tanned, 475 ;

value of same, $2,541 75; calf skins tanned, 200; value of same, $400; sheep skins tanned, 118; value of same, $59.

Remarks.—Tan all with cold liquors; have two round press leaches and Starbuck's six chambered mill; grind bark by steam power; use wash wheel for washing hides out of lime, and use coloring wheel to set grain and color evenly; shave and scour by hand; use from five to ten degree liquor in the yard, and take great care to have all the lime worked out before the hides come to any liquor, in order to get bright colors and soft and pliable leather.

R. R. Kingsley & Son, post office address, Mansfield, Pa.

Production, slaughter leather; annual product in lbs., 53,880; value of same, $16,161; number of persons employed, 3; cords of hemlock bark used, 200; value of same, $850; domestic hides tanned, 1,940; value of same, $5,710; calfskins tanned, 1,030; value of same, $1,287.

R. Hammond & Co., post office address, Osceola, Pa.

Production, hemlock sole leather; annual product in lbs., 400,000; value of same, $100,000; number of persons employed, 20; cords of hemlock bark used, 3,000; value of same, $15,000; foreign hides tanned, (South American) 15,000; value of same, $75,000; wages per day paid employees—tanners, $2; beam hands, $2; yard hands, $1 25; rollers and spongers, $1 25; bark grinders, $1 25; common laborers, $1 00.

Bailey, Lowell & Co., post office address, Wellsboro', Pa.

Production, hemlock sole leather; annual product in lbs., 1,305,945; value of same, $320,000; number of persons employed, 45; cords of hemlock bark used, 7,399; value of same, $36,995; foreign hides tanned (Buenos Ayres and Montivides) 35,233; value of same, $184,130 35; wages per day paid employees—tanners, (foremen) $3 50; beam hands, $2; yard hands, $1 50; rollers and spongers, $1 50; bark grinders, $1 50; handlers, $1 50; firemen, $2; night watchmen, $2; liquor runners, $1 50; scrubbers, $1 75; oilers, $1 50; loft hands, $1 50; common laborers, $1 50;

Remarks.—Run all working days 10 hours each. This tannery was built in 1872. Has all the modern improvements and has a capacity to tan 45,000 hides annually.

M. A. Durif, post office address, Wellsboro', Pa.

Production, harness, upper and calf skins; number of persons employed, 3; cords of hemlock bark used, 100; value of same, $400; domestic hides tanned, 320; value of same, $1,042; calf skins tanned, 550; value of same, $467.

Remarks.—Employees receive $1 50 per day each. Grind bark by horse power.

WAYNE COUNTY.

Horace Drake & Sons, post office address, Beech Pond, Pa.

Production, hemlock sole leather; annual product in lbs., 282,170; value of same, $72,753 19; number of persons employed, 17; cords of hemlock bark used, 2,200; value of same, $11,000; foreign hides tanned, 8,051; value of same, $49,921 62; wages per day paid employees—beam hands, $1 40; yard hands, $1 25; rollers and spongers, $1 35; bark grinders, $1; common laborers, $1.

Remarks.—The value of leather tanned, as above given, is less commission, cartage and inspection. The tannery is in operation during the entire year.

J. T. & W. Cromwell, post office, address, Hawley, Pa.

Production, Union crop sole leather; annual product in lbs., 300,000; value of same, $90,000; number of persons employed, 25; cords of hemlock bark used, 2,000; value of same, $14,000; cords of oak bark used, 250; value of same, $1,750; domestic hides tanned, 7,500; value of same, $45,000.

Remarks.—Building 225 feet long and 42 feet wide. Water power. Situated on Wallen Paupack creek, on the boundary line between Wayne and Pike counties. Manufacture nothing but Union crop sole leather from domestic hides bought in the New York market, and tanned with oak and hemlock bark. Business commenced in 1856 and continued until the present time.

Wefferling, Bruning & Co., post office address, Honesdale, Pa.

Production, hemlock sole leather; annual product, sides, 16,000; value of same, $80,000; number of persons employed, 12; cords of hemlock bark used, 1,600; value of same, $8,000; foreign hides tanned, 8,000; value of same, $40,000.

Burton J. Morse, post office address, Sedgedale, Pa.

Production, hemlock sole leather; annual product in lbs., 525,000; value of same, $130,000; number of persons employed, 56; cords of hemlock bark, 4,300; value of same, $26,000; foreign hides tanned, 21,738; value of same, $117,000.

Remarks.—In operation about ten months during the year. Employees receive an average of $1 50 per day each.

Ira Nichols, post office address, Pleasant Mount, Pa.

Production, hemlock sole leather; annual product in lbs., 252,000; value of same, $65,000; number of persons employed, 15; cords of hemlock bark used, 1,500; value of same, $7,500; foreign hides tanned, 7,000; value of same, $35,000; wages per day paid employees—tanners, (foremen) $2 75;

beam hands, $1 50; yard hands, $1 00; rollers and spongers, $1 25; bark grinders, $1 00; engineers, $1 25; common laborers, $1 00.

Remarks.—In operation ten months during the year. Tan only dry hides into hemlock sole leather—non-acid. Of the hides tanned, about 5,000 are Central American, and the balance Montevides, Mexican and Rio Grande.

WESTMORELAND COUNTY.

B. E. Hebrauk, post office address, Adamsburg, Pa.

Production, harness and calf skins; annual product in lbs., 8,400; value of same, $2,100; number of persons employed, 3; cords of oak bark used, 60; value of same, $510; domestic hides tanned, 330; value of same, $1,015; calf skins tanned, 170; value of same, $149.

James Douglas & Son, post office address, Latrobe, Pa.

Production, harness, upper, kip, calf and sheep skins; annual product in lbs., 25,000; value of same, $12,000; number of persons employed, 3; cords of oak bark used, 100; value of same, $800; domestic hides tanned, 1,700; value of same, $5,000; calf skins tanned, 500; value of same, $500; sheep skins tanned, 300; value of same, $200; wages per day paid employees—tanners, $1 25; curriers, $1 50; yard hands, $1 25.

Jacob Lobingier, post office address, Laurelville, Pa.

Production, sole, harness, skirting, upper, calf and sheep skins; number of persons employed, 2; cords of oak bark used, 35; value of same, $245; domestic hides tanned, 206; value of same, $641; calf skins tanned, 84; value of same, $84; sheep skins tanned, 36; value of same, $7.

Remarks.—Tan by the cold water process, without the use of steam, and for the last ten years have worked only domestic hides. The bulk of the calf skins, kip and upper leather finished last year remain unsold.

Will Mylor Hice, post office address, New Alexandria, Pa.

Production, upper, kip and calf skins; value of annual production, $325.

Remarks.—Small tannery with ten layaway vats, 1 lime, 1 bate, and 1 pool, calculated for the labor of one man. Grind bark by horse power.

W. L. Chambers, post office address, Pleasant Unity, Pa.

Production, harness, upper, kip and calf skins; value of annual product, $3,000; number of persons employed, 3; cords of oak bark used, 35; value of same, $275; domestic hides tanned, 350; value of same, $1,300; calf skins tanned, 120; value of same, $150; sheep skins tanned, 40; value of same, $10.

WYOMING COUNTY.

Smith Brothers, post office address, Factoryville, Pa.

Production, calf skins and sheep skins; number of persons employed, 6; tons of hemlock bark used, 120; value of same, $660; calf skins tanned, 2,106; value of same, $2.582 67; sheep skins tanned, dozen, 1,998; value, $7,098 50.

Childs & Bloomer, post office address, Nicholson, Pa.

Production, Union crop sole leather; annual product in lbs., 350,000; value of same, $108,500; number of persons employed, 21; cords of hemlock bark used, 2,000; value of same, $11,000; cords of oak bark used, 50; value of same, $400; domestic hides tanned, 10,000; value of same, $66,000; wages per day paid employees—beam hands, $1 50; yard hands, $1 40; rollers and spongers, $2; bark grinders, $1 25; common laborers, $1 25.

Remarks.—Make Union crop sole leather, which is chiefly used for men's fine sewed work and ladies' and children's shoes. Hides are unhaired by liming, while hemlock leather tanners prefer unhair by sweating. Use green salted hides. In operation during the entire year.

Philip Thomas, post office address, Skinner's Eddy, Pa.

Production, rough and finished leather; annual product in lbs., 48,700; value of same, $14,400; number of persons employed, 5; cords of hemlock bark used, 300; value of same, $1,500; cords of oak bark used, 150; value of same, $900; domestic hides tanned, $2,500; value of same (estimated,) $6,550; calf skins tanned, 500; value of same (estimated,) $600.

YORK COUNTY.

Joseph Deardorf & Co., post office address, Dillsburg, Pa.

Production, slaughter leather; number of persons employed, 5; cords of oak bark used, 80; value of same, $640; domestic hides, 800; value of same, $3,000; calf skins tanned, 400; value of same, $500.

Remarks.—Employees do all work in common, and cannot be classified. Firm has been in existence over twenty years, and does a small home business.

H. Winebrenner & Son, post office address, Hanover, Pa.

Production, oak sole leather; annual product in lbs., 62,719; value of same, $21,950; number of persons employed, 4; tons of oak bark used, 472; value of same, $4,183 18; domestic hides tanned, 2,000; value of same, $14,571 81.

Remarks—Buy all bark by the ton, (2,000 lbs.,) and tan only slaughter steer hides. Use steam power for grinding bark, rolling and pumping.

Clinton Keister, post office address, Yocumville, Pa.

Production, slaughter leather; annual product in lbs, 20,900; value of same, $6,500; number of persons employed, 2; cords of oak bark used, 80; value of same, $640; domestic hides tanned, 800; value of same, $3,342; calf skins tanned, 300; value of same, $450.

Baugher, Frey, & Kurtz, post office address, York, Pa.

Production, slaughter sole leather; annual product in lbs., 255,000; value of same, $71,400; number of persons employed, 15; cords of oak bark used, 1,800; value of same, $15,000; domestic hides tanned, 7,500; value of same, $45,000; wages per day paid employees—tanners, $3 00; beam hands, $1 50; yard hands, $1 37; rollers and spongers, $1 42; bark grinders, $1 33.

F. C. Smyser, post office address, York, Pa.

Production, rough leather; annual product in lbs., 75,000; value of same, $18,350; number of persons employed, 8; cords of oak bark used, 400; value of same, $4,700; domestic hides tanned, 2,578; value of same, $10,940; calf skins tanned, 76; value of same, $114; wages per day paid employees—beam hands, $1 50; yard hands, $1 50; bark grinders, $1 25; common laborers, $1 25.

RECAPITULATION.

NAMES.	Production.	Annual product of leather in lbs....	Value of leather produced........	Ne. of persons employed...........	Domestic hides tanned	Value of domestic hides tanned	For'n hides tanned	Value of foreign hides tanned.....	Calf skins tanned .	Value of calf skins tanned...........	Value of bark used
Adams—											
William H. Rupp...	Rough leather and calf skins,		$6,164	3	650	$3,250			600	$1,050	$720
Edmund Crouse....			5,000	2	800	3,000					650
John F. Miller......	Harness, upper & calf skins,		1,200		150	850			75	200	200
J. E. Steinour & Bro,											
Allegheny—											
A. & J. Groetzinger..	Oak sole	630,000	225,000	32	15,000	120,000					63,000
John C. Lappe......	Harness	308,134	115,454	23	8,320	54,080					2,115
Armstrong—											
C. Mardorf..........	Sole		20,000	5		6,650					2,500
Bedford—											
A. S. Hench.........	Oak sole	153,410	51,000	8			3,700	$30,020			6,012
J. B. Hoyt & Co.....	Oak butts	1,000,000	375,000	50							
A. Haderman & Son,	Harness, upper, calf skins, &c.		6,000	4	594	1,804			230	230	1,080
Wm. A. B. Clark...			11,000	4	1,500	8,000					
John Griffith.......	Slaughter	4,400	1,540	2	250	700			150	120	280
Blair—											
William Smith		136,000	35,000	8	3,900	19,500	100	750			1,170
William M. Bloom..				2	305	1,160			75	57	280
Bradford—											
Underhill & Noble..	Hemlock sole	706,567	167,268	30	6,404	25,439	12,962	72,600			23,100
Gleason & Irvin.....	Union crop sole	91,473	28,356	5	2,478	18,899					1,600
Adam Innis, Scotia,	Union crop sole	295,012	94,403	18	8,305	58,135					7,975
Do...Caledonia,	Union crop sole	325,872	101,020	17	9,501	66,507					9,501
Towanda Tan'g Co..	Hemlock sole	473,658	96,941	30			13,718	67,248			18,102

Bowen & Inness	Union crop sole	144,000	38,000	6	4,000	24,000					4,125
A. A. Bishop	Upper, harness & calf skins,			1	195	435			150	160	80
Bucks—											
R. B. Delp	Upper and calf skins			1	900				500		765
A. F. Sheetz	Upper and calf skins			3	1,000	3,725			700	1,110	1,790
Noah Wambold	Kip and calf skins		3,576	3	682				114		560
A. D. Atherholt	Upper and calf skins	10,510	4,544	3	680	1,960			200	250	1,000
Cambria—											
John J. Evens			3,200	3							
W. H. Rosensteel	Union crop sole	570,735	179,185	25	18,000	75,000					22,500
John E. Hare		2,000	700	1	85	191			50	50	280
Cameron—											
Hamilton, Martin & Co	Hemlock sole	562,188	140,430	38	9,000	50,000	7,000	45,000			20,000
B. F. Sherwood	Hemlock sole	660,000	198,000	34			20,000	88,000			22,500
Carbon—											
Hailer & Bro				1	600	1,587			300	390	600
Centre—											
Kurtz & Stover		6,800	1,768	2	670	1,446					200
Jas. L. Sommerville,	Oak slaughter, sole and belt,	138,996	47,258	8	4,088	30,362					8,400
Daniel Moser	Sole, upper, calf & sheep skins		1,000	2							
C. Buck	Oak sole [skins	88,000	26,400	4							4,075
J. F. Montgomery	Light slaughter kip and calf	5,444	1,800								
William Baird	Harness, upper and calf skins		2,000	2	325	900			50	25	365
Joseph Shirk				4		1,450					900
Chester—											
John Gilfillan		48,000	16,00	6	1,500	7,500					4,500
M. B. Chambers		69,681	24,369	6	1,950	9,450			2,483	4,000	3,300
Clarion—											
S. D. Myers	[sheep skins		1,400	3	225	650			75	75	151
Joseph Craig	Harness, upper, kip, calf and	4,800	3,020	3	350	1,275			150	225	330
Clearfield—											
Mordecai Shirk		86,400	14,192	6	3,900	9,900			500	750	4,000
W. S. White & Son	Sole		165,000	33							

RECAPITULATION—CONTINUED.

NAMES.	PRODUCTION.	Annual product of leather in lbs....	Value of leather produced........	No. of persons employed..........	Domestic hides tanned..........	Value of domestic hides tanned	For'n hides tanned	Value of foreign hides tanned	Calf skins tanned,	Value of calf skins tanned..........	Value of bark used
Clinton—											
M. L. M'Kean	Oak rongh	120,000	$33,000	6	3,000						$3,850
Columbia—											
Eckfeldt & Richie				6	1,125	$12,400			100	$200	2,400
Crawford—											
Delaney & Brown				1	200	550			250	375	220
Cumberland—											
Jacob Kosh	Harness, kip and calf skins,	38,400	11,520	4	1,240	6,120			200	225	1,800
D. F. Stager		18,675	6,175	4	665	2,530			750	750	902
Waggoner & Shively	Slaughter	30,590	13,242	5	1,205	4,116			695	765	1,600
Dauphin—											
Josiah P. Stine	Oak slaughter	3,137	1,109	1	153	405			75	90	240
John H. Lenker	Oak slaughter	12,400	3,475	1	450	1,445			300	300	480
Josiah Matter	Slaughter	10,000	3,500	2	475	2,255			70	56	560
Solomon Cassel	Harness, upper, kip and calf skins	18,000	5,900	2	825	2,400			300	300	900
S. B. Ramberger				1	340	1,650			200	250	400
Conrad Baur	Oak slaughter	2,400	862	2							
S. M'Ilhenny			4,600	3	700	2,200			300	400	900
Simon Werb	Slaughter		3,044	1	375	1,238			100	170	520
J. & C. Swab	Oak slaughter	14,051	4,480	4	540	1,872			275	325	580
Elk—											
W. H. Osterhout	Hemlock sole	2,500,000	600,000	80	30,000	150,000	40,000	$200,000			54,000
Grant & Horton	Hemlock sole	1,200,000	300,000	45	8,508	42,540	20,331	81,324			26,000
Wilcox Tanning Co.,	Hemlock sole	4,000,000	1,000,000	210	5,500	30,000	100,000	550,000			110,000

Erie—											
C. A. Auer	Upper	160,000	40,000	10	2,500	24,000			800	1,000	3,100
C. E. Gunnison & Co.	Slaughter sole and upper		44,140	14	5,400	23,650			1,200	1,500	3,100
S. Y. Rossiter	Rough slaughter	76,800	19,200	4	3,272	12,925			120	125	1,575
C. & W. C. Smith & Co	Rough and finished kip and calf skins		13,000	5	2,400	5,000			1,200	1,500	1,100
Fayette—											
S. S. Myers	Rough & finished slaughter,		2,720	2	400				200		700
Forest—											
G. Brooks & Co	Hemlock sole	524,521	120,639	46	9,776	51,795	8,645	47,664			36,452
Franklin—											
A. Stiffel	Rough slaughter	15,727	6,720	2	820	2,546			575	642	681
Samuel Zimmerman	Slaughter		2,530	2	350				200		250
D. Miller	Sole, kip and calf skins			4	1,900				120		2,800
Fulton—											
Rowland Austin	Oak sole	120,000	40,000	8	2,700	19,900	275	2,550			6,000
Greene—											
William Cotterrel			20,000	11	2,500				900		1,050
Huntington & Son.,			3,000	3	500	2,100			50	150	280
Huntingdon—											
Peter Kean	Harness, upper & calf skins,	18,200	5,300	4	840	2,250			140	126	840
Austin Green			1,620		259	627			46	41	240
Jeremiah Bauman	Oak sole	240,000	72,000	13	6,000	48,000					9,800
Leas, M'Vitty & Sons	Oak sole	279,000	104,500	14	6,700	46,975					13,125
Indiana—											
P. Maher	Oak tanned	16,800	5,040	3	700	2,940					980
Charles Kerler	Oak tanned	24,000	6,000	2	850						1,000
Nicholas Peddicord,				1	210	630					230
J. Reed			1,500	1	325						280
Juniata—											
John Shell	Rough, kip and calf skins	12,600		2	550	1,587			100	110	550
Jacob Smith	Slaughter		11,175	4	1,500	5,600			150	225	1,500
William G. Winey	Rough slaughter	5,450		2	519						780
Jacob S. Bason	Rough slaughter, upper, kip and calf skins	5,000	2,500	2	200	614					210
Solomon Lieber	Kip, calf and sheep skins		900	1	195	456					107

RECAPITULATION—CONTINUED.

NAMES.	Production.	Annual product of leather in lbs....	Value of leather produced........	No. of persons employed...........	Domes'c hides tanned.............	Value of domestic hides tanned.....	Foreign hides tanned..............	Value of foreign hides tanned.....	Calf skins tanned,	Value of calf skins tanned...........	Value of bark used
Lancaster—											
G. W. Sensenich...	Slaughter....................	8,914	$4,208	3	475	$1,815	....	....	400	$580	$690
Henry Hollinger....	Harness, calf and sheep skins	92,090	35,175	11	2,600	14,500	....	....	204	204	3,850
John Dohner........	Harness, upper, kip and calf skins......................	38,220	13,112	7	1,215	4,700	....	....	500	500	1,250
Amos Hollinger.....	Finished oak harness.......	146,000	51,100	16	3,000	18,000	....	....			6,000
Michael Haberbush,	Oak harness................	48,000	16,800	6	1,500	3,360	....	....	....	....	2,500
W. H. Miller........	Harness and calf skins......	16,600	6,350	3	400	1,200	....	....	200	160	1,040
Isaac W. Leidigh...	Harness, belting and shoe-skirting....................	32,480	10,606	5	1,120	4,838	....	....	300	375	1,920
Lebanon—											
William Beaver.....	Slaughter and calf skins....	....	....	4	1,500	6,600	....	....	700	778	2,000
David Buck.........	....	12,300	3,900	3	650	1,875	....	....	200	200	720
Josiah S. Light......	....	10,500	3,300	3	420	....	....	....	250	....	700
J. & H. Loose.......	....	....	14,601	5	1,427	6,610	....	....	955	1,292	2,410
Lehigh—											
Mosser & Grim.......	Sole and calf skins..........	186,255	62,151	19	7,852	10,380	....	....	2,200	2,200	13,050
Charles Burkhalter,	....	7,200	3,318	2	300	1,080	....	....	200	264	630
A. D. Kachline......	Harness, calf and sheep skins	....	....	2	770	2,810	....	....	200	200	800
John E. Dubbs......	Rough slaughter............	....	....	2	600	2,160	....	....	300	350	1,250
Jas. Singmaster.....	Slaughter and calf skins....	....	8,251	4	1,453	5,602	....	....	762	1,076	2,000
Luzerne—											
James Davis & Co...	....	106,600	32,000	6	3,000	17,550	....	....	....	....	3,825
Beaver Run Tanning Company..........	Union crop sole............	145,000	45,600	9	3,540	21,600	....	....	....	....	4,590
A. B. M'Kinstry....	Union crop sole............	600,000	180,000	33	20,000	100,000	....	....	....	....	16,300

Lycoming—											
W. Hess & Co......	......	......	1,445	......	145	......	20	......	80	......	290
Hardenburg, Hartwell & Co.........	Sole......	700,000	175,000	35	10,000	40,000	10,000	$40,000	......	......	17,500
J. A. Webb.........	Harness, upper and calf skins	......	......	4	500	1,600	......	......	200	200	320
Charles Kelchner...	......	......	......	......	170	450	......	......	100	100	165
E. R. Wilkison......	......	6,723	2,017	3	292	1,200	......	......	......	......	500
Love & Russell	Slaughter......	17,000	5,928	3	711	2,464	......	......	......	......	650
Wm. Updegraff.....	Slaughter......	20,599	5,520	4	836	2,874	......	......	......	......	680
Mifflin—											
W. R. M'Kee & Co..	Rough, slaughter & calf skins	45,000	12,000	3	1,500	7,200	......	......	200	200	1,050
Spanogle & Pannebaker..............	Sole......	412,089	145,805	24	......	......	......	......	......	......	24,500
A. T. Hilands & Co.,	Rough sole, harness, upper and calf skins......	21,840	6,539	2	811	3,457	......	......	142	189	780
Monroe—											
Charles E. Kistler..	Union crop sole......	378,488	116 212	22	10,394	69,431	......	......	......	......	22,250
Montgomery—											
John C. Morgan....	Harness, upper and calf skins	19,600	8,000	3	582	2,420	......	......	931	1,500	1,025
D. M. Casselberry...	Light slaughter, kip and calf skins......	......	8,000	3	800	2,800	......	......	1,300	2,000	1,450
William T. Miller...	Calf skins......	......	4,500	1	......	......	......	......	2,000	......	480
Montour—											
James Woodside,...	......	25,800	9,250	4	900	3,560	......	......	800	1,200	1,000
W. D. Weidenhamer,	Slaughter......	8,000	5,000	2	750	2,450	......	......	500	500	260
Northampton—											
Ephraim Loux......	Slaughter and calf skins....	......	3,000	2	400	1,175	......	......	225	300	480
George Fulmer	Union crop sole......	420,000	120,000	23	12,000	89,000	......	......	......	......	18,990
Michael Weaver....	Oak sole......	100,000	27,000	4	3,000	16,200	......	......	......	......	3,600
Northumberland—											
S. M'Ninch & Co....	Slaughter......	......	6,000	3	500	2,000	......	......	300	450	900
Perry—											
George Hench	Oak sole	124,800	46,176	7	......	......	2,600	19,000	......	......	4,200
Jos. Howell & Co....	Oak sole	200,000	70,000	10	2,000	14,000	3,000	22,500	......	......	11,000
J. A. Bechtel & Son,	Oak sole	425,000	150,000	16	11,000	......	......	......	......	......	19,200

RECAPITULATION—CONTINUED.

NAMES.	Production.	Annual product of leather in lbs....	Value of leather produced........	No. of persons employed..........	Domestic hides tanned..........	Value of domestic hides tanned....	For'n hides tanned	Value of foreign hides tanned.....	Calf skins tanned.	Value of calf skins tanned..........	Value of bark used
Philadelphia—											
Charles B. Williams & Sons	Oak sole	162,000	$57,000	14	4,500	$30,000					$10,000
Keen & Coates	Oak sole	400,000	148,000	24	8,340	62,000					30 000
Wm. F. Forepaugh, Jr. & Bros.	Belting and hose		80,000	20							
Beeson & Crawford	Oak sole			4	1,800	10,500					3,750
Schnylkill—											
A. Gensemer & Co.		115,500	34,650	7							6,000
P. M. Barrow	Slaughter, kip and calf skins	30,000	9,000	3	1,400	5,700			300	$300	1,030
Snyder—											
Ulrich & Bro	Slaughter	3,800	1,439	2	198	752			100	100	140
Somerset—											
Smith & Jeffery	Harness, upper, calf and sheep skins	12,000	3,000	2	360	1,650	15	$100	200	200	620
Jehu M'Millen	Slaughter			2	150	600			75	90	200
H. L. Dean & Bro.	Slaughter			3	100	300			75	120	180
J. W. Sullivan	Slaughter ....[calf skins			1	65	170			50	40	90
J. R. M'Millen & Sons	Sole, harness, upper, kip and	20,000	8,000	3	800	3,200			500	500	900
Jonathan Miller	Sole, harness, upper, kip, calf and sheep skins		4,000		500	1,700			300	300	687
Jeremiah Wingert.	Upper, kip, calf & sheep skins		5,600	5	640	2,520			300	300	815
Susquehanna—											
C. S. Foster	Rough upper and calf skins,	9,600	2,270	1	400	1,100			200	160	250
A. Corbin & Co	Hemlock sole	437,400	100,070	16			11,773	66,670			11,500
Jasper G. Stiles	Rough upper ....[skins.	36,000	9,000	2	1,500	6,000					750
H. Jenkins & Son	Harness, upper, kip and calf		5,000	5	500	1,600			200	250	431

Tioga—											
Harkness & Rockwell	Kip and calf skins	2,200	975	2	150	450			100	125	120
F. Cook & Son	Hemlock sole	360,000	90,000	15			10,000	50,000			6,000
G. A. Veil	Harness, upper, kip and calf skins	12,000	3,000	2	475	2,541			200	400	350
R. R. Kingsley & Son	Slaughter	53,880	16,164	3	1,940	5,710			1,030	1,287	850
R. Hammond & Co.	Hemlock sole	400,000	100,000	20			15,000	75,000			15,000
Bailey, Lowell & Co.	Hemlock sole	1,305,945	320,000	45			35,233	184,130			36,995
M. A. Durlf	Harness, upper & calf skins,			3	320	1,042			550	467	400
Wayne—											
Horace Drake & Sons	Hemlock sole	282,170	72,753	17			8,051	49,921			11,000
J. T. & W. Cromwell	Union crop sole	300,000	90,000	25	7,500	45,000					14,250
Wefferling, Bruning & Co	Hemlock sole		80,000	12			8,000	40,000			8,000
Burton G. Morse	Hemlock sole	525,000	130,000	56			21,738	117,000			26,000
Ira Nichols	Hemlock sole	252,000	65,000	15			7,000	35,000			7,500
Westmoreland—											
B. E. Hebank	Harness and calf skins	8,400	2,100	3	330	1,015			170	149	510
James Douglas & Son	Harness, upper, kip, calf and sheep skins	25,000	12,000	3	1,700	5,000			500	500	800
Jacob Lobingier	Sole, harness, skirting, upper, calf and sheep skins			2	206	641			84	84	245
Will Mylor	Upper, kip and calf skins		325								
W. L. Chambers	Harness, upper, kip and calf skins		3,000	3	350	1,300			120	150	275
Wyoming—											
Smith Brothers	Calf and sheep skins			6					2,106	2,582	660
Childs & Bloomer	Union crop sole	350,000	108,500	21	10,000	66,000					11,400
Philip Thomas	Rough and finished	48,700	14,400	5	2,500	6,550			500	600	2,400
York—											
Joseph Deardorf	Slaughter			5	800	3,000			400	500	640
H. Winebrenner	Oak sole	62,719	21,950	4	2,000	14,571					4,183
Clinton Keister	Slaughter	20,900	6,500	2	800	3,342			300	450	640
Baugher, Frey & Kurtz	Slaughter sole	255,000	71,400	15	7,500	45,000					15,000
F. C. Smyser	Rough	75,000	18,350	8	2,578	10,940			76	114	4,700
		25,934,107	7,845,985	1,706	392,485	1,947,377	359,163	1,884,477	38,403	42,903	964,884

LUMBER.

BRADFORD COUNTY.

H. & P. PECK, SYLVANIA, BRADFORD COUNTY, PA.

Number of feet of white pine lumber, 15,000 at $16 per M.; hemlock, 200,000 at $8 per M.; number of thousand shingle—pine, 75 at $4 per M.; hemlock, 10 at $3 per M.

Whole number of persons employed, 5.

Number of men, 5; daily wages, $1 50; time in operation during year, 4 months.

H. & P. PECK.

T. S. GRISWOLD, CANTON POST OFFICE, PA.

Number of feet of white pine lumber, 15,000 at $225; hemlock, 160,000 at $1,280; cherry, 2,500 at $37; ash, 3,800 at $76; birch, 1,100 at $11 20; maple, 800; bass, 10,000 at $100.

Employ 6 men at $1 25 per day; 2 boys at 75 cents per day for three months.

I am a carpenter and joiner; also, am engaged in farming.

T. S. GRISWOLD.

S. H. SACKETT.

Manufacturer of lumber, lath and shingles, Towanda, Pa.

Number of feet of white pine lumber, 120,000 at $1,800; hemlock, 30,000 at $300; ash, 2,000 at $30; number of thousand shingles—pine, 50,000 at $175; hemlock, 13,250 at $33 12; lath—pine, 60,000 at $90; hemlock, 10,000 at $15.

Whole number of persons employed, 5

Number of men, 5; daily wages, $1 50 and $1 25; time in operation during year, 60 and 90 days.

My mill is run by steam and capable of cutting 1,000,000 feet yearly, but business has been so dull and not paying enough I have not been doing much; I think the wages to high for the present price of lumber.

S. H. SACKETT.

CAMBRIA COUNTY.

JOSEPH FRIEDHOFF, JOHNSTOWN, PA.

Manufacture lumber, doors, sash and blinds; value of annual product about $40,000; employ 6 persons; 5 men and 1 boy; wages paid men, $2 per day; wages paid boy, 40 cents per day; in operation about two-thirds of the time.

CENTRE COUNTY.

HOOVER, HARRIS & CO.

Phillipsburg, Centre county, Pa.

Value of annual product, $60,000; employ 125 persons; 115 men at $1 75 per day; 5 youth, at 90 cts. to $1; 5 foremen, at from $3 to $4 per day.

Remarks.—1 mill in operation 6 months and one 9 months during the year; manufacture lumber, lath, shingles and flooring.

CLEARFIELD COUNTY.

T. C. HEIMS, OSCEOLA MILLS, CLEARFIELD COUNTY, PA.

No. of feet of white pine lumber, 300,000, at $18, $5,400; hemlock lumber, 898,000, at $10, $8,980; stock on hand January 1st, 1876—oak logs, 152,000 feet, at $10, $1,520; pine logs, 700,000 feet, at $10, $7,000; hemlock logs, 3,000,000 feet, at $5, $15,000; hemlock bark, 1,300 cords, at $4, $5,200; hemlock lath, 412,500, at $1 60, $660; total value, $43,760.

Whole number of persons employed, 17.

The number of each class employed and daily wages:

OCCUPATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year	REMARKS.
Sawyer	1	....	$4 00	......	June 8, to Dec. 31, 1875.	Mill was burned in December, 1874, and not rebuilt until June, 1875. During peeling season, and in the winter when hauling was good, employed on average, forty men daily.
Setter	1	....	2 00	......		
Off-bearer	1	....	2 25	......		
Edger	1	....	2 00	......		
Log jacker	1	....	2 00	......		
Engineer	1	....	2 50	......		
Watchman	1	....	1 25	......		
Choppers	3	....	2 00	......		
Teamsters	3	....	2 00	......		
Stocker	1	....	*	......		
Lath sawyer	1	2	2 00	$2 00		

* Contract.

THOMAS C. HEIMS.

CLINTON COUNTY.

I. I. CURTIN & CO., LOCK HAVEN, PA.

Number of feet of white pine lumber, 2,000,000 at $36,000; hemlock, 400,000 at $4,000; oak, 600,000 at $12,000; ash, birch and maple, 50,000 at $2,500; number of thousand shingle--pine, 1,000,000; hemlock, $3,500; lath—pine, 300,000 at $875.

Whole number of persons employed, 33.

Engineer, men, 28 at $2 50 per day; boys, 5 at 80 cents; sawyers and filers, $2 50; average other men, $1 75; time in operation during year, 8 months.

I. I. CURTIN & CO.

MANUFACTURERS—LUMBER.

MILL OWNERS.	Pine lumber	Value	Oak	Value	Hemlock	Value	Men employed	Average wages per day	Days worked in year.	Post office.
Messrs. Gamble & White	6,000,000	$84,000 00					30	$1 50	180	Renova, Pa.
A. C. Noyes	500,000	7,000 00	500,000	$9,000 00			10	1 50	240	Westport, Pa.
Brown, Shouse & Co.	2,000,000	28,000 00					30	1 50	60	Lock Haven, Pa.
D. H. Blanchard & Co	9,000,000	126,000 00					40	1 50	210	Lock Haven, Pa.
Shaw, Towns & Co	1,500,000	21,000 00					20	1 50	36	Lock Haven, Pa.
Pardee, Cook & Co	6,000,000	84,000 00					25	1 50	210	Lock Haven, Pa.
W. A. Simpson	1,500,000	21,000 00					25	1 50	45	Lock Haven, Pa.
Bridgens & Mann.	4,000,000	56,000 00					25	1 50	150	Lock Haven, Pa.
I. I. Curtin & Co.	2,000,000	36,000 00	600,000	12,000 00	400,000	$4,000 00	28	1 75 to 2 50	240	Lock Haven, Pa.
Furst, Long & Co.	800,000	11,000 00					16	1 50	30	Lock Haven, Pa.
	33,300,000	474,000 00	1,100,000	21,000 00	400,000	4,000 00	249			

The above table is compiled from data furnished by Hon. A. C. Noyes to this Bureau.

LEHIGH COUNTY.

C. W. WIEAND, E. GREENVILLE, MONTGOMERY COUNTY, PA.

Rural Mills, Lehigh county, Pa., Shimersville P. O.

Number of feet of white oak, about 10,000, value $300; black oak, &c., 30,000 feet, at $600; chestnut posts, &c., 20,000, at $400. Whole number of persons employed, 2: Miller and day laborer 2, at $1 25 per day; time in operation during the year, 300 days in 1875.

LUZERNE COUNTY.

RUGGLES AND SHONK.

Ruggles Post Office, Luzerne county, Pa.

Number of feet of white pine lumber, 5,000, at $50; hemlock, 300,000 feet, at $1,800; ash, 10,000 feet, at $100; birch, 25,000 feet, at $200; maple, 50,000 feet, at $400; beech, 50,000 feet, at $400; basswood, 50,000 feet, at $400; poplar, 10,000 feet, at $100.

Number thousand shingle—pine, 100,000, at $300; hemlock, 50,000, at $75.

Whole number of persons employed, 18.

The number of each class employed and daily wages:

OCCUPATION.	No. of men........	Daily wages paid men	Time in operation during year.....	REMARKS.
Sawyer	1	$2 50	4 months.	
Engineer	1	1 50	2....do.	
Mill hands	5	1 25	2....do.	
Choppers	6	....	....	By the thousand.
Blacksmith	1	1 50	1 year.	
Teamsters	3	1 30	1 year.	
Book keeper	1	2 00	1 year.	

Characteristics of establishment.—One steam saw mill, 1 planer, 1 lath mill, and 1 shingle mill.

RUGGLES & SHONK.

S. Y. KITTLE, WILKESBARRE, PA.

Re-sawing and planing lumber.

Value of annual product, $4,000.

Employ three persons beside myself.

Daily wages paid men, $3; youth, $1 25 per day; in operation during the year 300 days.

M'KEAN COUNTY.

H. M. BUSH, SMETHPORT, M'KEAN CO., PA.

Manufactured 60,000 feet white pine; value, $780 ; 200,000 feet hemlock; value, $1,200 ; 500 feet cherry ; value, $45 ; 3 000 feet ash ; value, $42 ; also 100,000 shingles, $300 ; 25,000 pine lath, $56 ; 50,000 hemlock, $112 50 ; total, lumber, shingles and lath, $2,535 50.

Employ one man beside myself, and pay him at the rate of one dollar per day. My mill is a small custom mill situated on a small creek and can only run it for a small portion of the year.

C. C. WRIGHT.

Farmer's Valley, M'Kean county, Pa.

Number of feet of white pine lumber, 200,000, at $15 per M., $3,000 ; hemlock, 400,000, at $7 per M., $2,800 ; oak, 100,000, at $16 per M., $1,600 ; hemlock shingles, 100,000 at $3, $300.

Whole number of persons employed : 12.

Number of men, 12, $1 75 per day ; in operation six months during the year.

C. C. WRIGHT.

BUFFALO COAL CO.,

Clermont, Pa.

Manufactured 2,646,768 feet ; value, $15,880 61 ; 120,000 hardwood ; value, $1,207 19 :—$17,087 80. Also 200,000 shingles ; value, $600—$17,687 80.

Remarks.—All work done by contract ; hence unable to say the number of men employed, wages paid, etc. Lumber used up in erection of houses and in the mines.

G. MACFARLANE,
Engineer Buffalo Coal Co.

STATE LINE MILL.

C. T. Chamberlain, M'Kean county, Pennsylvania.

Principally hemlock manufactured.

No. of feet of white pine lumber, 50,000, at $6, $300 ; hemlock, 600,000, at $7, $4,200 ; ash, 6,000, at $18, $108 ; cucumber, 6,000, at $16, $96. No. thousand shingles, pine, 150,000, at $4, $600 ; hemlock, 10,000, at $1 75, $17 50.

Whole number of persons employed, 14; daily wages paid, $1 50 to $2 50; in operation two and a half months.

Characteristics of Establishment.—The mill is a steam mill with gang saws, circular saw, lath machine, shingle machine, gang edger, two 80-horse power engines, and everything necessary for a first class establishment. Owing to the great depression in the lumber business, I have only run my mill very little during the past year. It is capable of sawing four or five million feet a year when run to its full capacity.

C. T. CHAMBERLAINE,
Per S. R. C.

NORTHAMPTON COUNTY.

H. D. YEAGER & CO., BETHLEHEM P. O.

Number of feet of white pine lumber, 100,000, at $30 per M., $3,000; hemlock, 1,000,000 feet, at $16 per M., $1,600; ash, 5,000 feet, at $30 per M., $150; oak, 50,000 feet, at $35 per M., $1,750.

Number thousand shingle: Pine, 45,000, at $10 per M., $450; hemlock, 350,000, at $1 75 per M., $612 50.

Whole number of persons employed, 5.

The number of each class employed and daily wages: Four men, at $1 50 per day; 1 boy, at 90 cents per day.

Time in operation during the year, 10 months.

Remarks.—We have in connection with this mill a lumber yard, where we sell about one million feet white pine lumber per year, and about 2,000 tons coal, (hard coal.)

This saw mill was built in the year 1743 by the Moravian association; afterward sold to Lewis Doster, Sr., he sold to Lewis Doster, Jr., who sold to Worman & Manning in 1870; they sold it to the present firm, H. D. Yeager & Co., January 15, 1875.

The mill is in good running order, has three Turbine water wheels and about twenty-five horse power.

H. D. YEAGER & CO.

RITTER & BECK, SOUTH BETHLEHEM.

We manufacture doors, frames, blinds, mouldings, sash, brackets, stair railings, &c., in planing mill line.

Value in dollars of annual product: $16,807 04.

Whole number of persons employed: 13.

Foreman, 1, at $3 per day; carpenters, 1, $2 40; 1, $2 25; 1, $2 40; 1, $2 25; 1, $2; 1, $2 40; 1, $2 25; turner, 1, $2 25; machine men, 1, $2; 1, $1 75; engineer, 1, $1 75; teamster, 1, $1 50; time in operation during year, 276 days.

Characteristics of Establishment.—Our establishment is located on north side of Second street, South Bethlehem, Pa., consisting of a one story building 46 feet front by 90 feet deep used as machine department for ripping, planing, scroll sawing, turning, shaping, &c., with an attachment 50x18 feet, two story, used as work shop or finishing rooms. The above establishment is known as Northampton Saw and Planing Mill. With a capacity of employing from 20 to 30 men. We manufacture such as doors, shutters, blinds, sash, mouldings, scrollings, strapings and turnings, stair railings and all kinds of finished building material in wood work. Carving and stair railing a specialty. The amount of receipts as given in above report, $16,807 04, showing a very dull year ending December 31, 1875, where as usual or good trade some years exceed twice that amount. We consumed 250,000 feet of pine lumber, valued at $7,500 ; 7,000 feet of walnut, valued at $700, and 6,000 feet of ash, valued at $180 Established since 1872, and fitted up with all new and most improved machinery.

RITTER & BECK.

TIOGA COUNTY.

BLOSSBURG COAL CO.

Blossburg coal company, Corning, N. Y., and Arnot, Pa.

Number of feet of white pine lumber, 224,889, at $3,148 44 ; hemlock, 1,933,961 feet, at $11,603 76 ; cherry, 336 feet, at $5 04 ; maple, beech and other hard wood, 519,091 feet, at $5,190 91.

Number thousand shingles : Hemlock, 857,000, at $1,714 00 ; hemlock, 36,500, $73 00.

Whole number of persons employed, average, 37.

The number of each class employed and daily wages :

OCCUPATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys..........	Time in operation during year....
Filer	1	......	$2 87½	....	11½ months.
Cranker	1	......	1 75	....	
Fireman	2	......	1 70	....	
Sawers	2	1	1 60	$1 12½	
Choppers	10	......	1 60	....	
Teamsters	7	......	1 65	....	
Laborers	11	......	1 55	....	
Blacksmith	1	......	2 75	....	
Foreman	1	......	4 25	....	

F. N. DRAKE, *President.*

FALL BROOK COAL CO., ANTRIM, PA.

Number of feet of white pine lumber, 10,500 ; estimated value, $200 ; hemlock, 682,000 ; estimated value, $6,820 ; cherry, 1,500 ; estimated value, $40 ; birch, 4,500 ; estimated value, $75 ; number thousand shingles—hemlock, 30,000 ; estimated value, $75 ; lath—hemlock, 40,000 ; estimated value, $80.

Whole number of persons employed : 8.

The number of each class employed and daily wages : Foreman, 1, $80 per month ; engineer, 1, $55 per month ; head sawyer, 1, $2 per day ; laborers, 5, $1 50 per day. In operation, four months.

THOS. FARRER, *Agent.*

FALL BROOK COAL COMPANY,

Fall Brook, Tioga county, Pa.

Number of feet of white pine lumber, 7,930 at $30, $237 90 ; hemlock, 147,000 at $7, $1,029 00 ; cherry, ash, birch and maple, 109,100 at $12, $1,309 20 ; total, $2,576 10.

Whole number of persons employed : 10.

General superintendent, 1, $4 00 per day ; foreman of saw mill, 1, $2 12 ; engineer, 1, $2 00 ; laborers, 7, $1 60 ; time in operation during year, 6 weeks.

A. J. OWEN,
Cashier.

TRUMAN & BOWEN, WELLSBORO', TIOGA CO., PA.

Number of feet of white pine lumber, 24,668 ; value, $493 36 ; hemlock, 1,142,595 ; value, $9,140 76 ; cherry, 12,081 ; value, $241 62 ; ash, 63,688 ; value, $1,146 38 ; beach, 3,475 ; value, $52 12 ; maple, 8,156 ; value, $122 34 ; baswood, 244,124 ; value, $3,929 48 ; elm, 2,730 ; value, $40 95 ; oak, 18,471 ; value, $369 42 ; chestnut and white wood, 18,270 ; value, $365 40 ; hickory, 11,079 ; value, $221 58 ; number thousand shingles, 150 ; value, $450.

Whole number of persons employed : 16.

The number of each class employed and daily wages:

OCCUPATION.	No. of men......	No. of boys......	Daily wages paid men..........	Daily wages paid boys........	Time in operation during year....
Head sawyer	1		$2 75		4 mos.
Sawyers	2		2 00		
Do	1		1 75		
Fireman	1		2 00		
Slab cutter		1		$1 50	
Log rollers and lumber pilers	8		1 75		
Shingle sawyer	1		2 25		
Shingle packer		1		1 00	

Characteristics of Establishment.—Circular saw mill with edge saw and shingle saw; steam power.

TRUMAN & BOWEN.

TUBBS & FRIDLEY, OSCEOLA, PA.

Number of feet of white pine lumber, 105,000, $1,575 00; hemlock, 350,000, $2,800 00; ash, 25,000, $500 00; basswood, 25,000, $375 00; staves, 80,000, $1,250 00. No. thousand shingles, pine, 50,000, $200 00; hemlock, 75,000, $225 00. Lath, pine, 60,000, $120 00; hemlock, 100,000, $180 00.

Whole number of persons employed, 9; daily wages paid, $1 50; time in operation during year, three months.

Remarks.—We have not been operating but very little within the past two years in consequence of no sales for lumber of any account.

Characteristics of Establishment.—Our mill is 60x80 feet in size, with 1 gang, 30 saws, 1 56-inch circle saw, stave mill, shingle mill and lath mill, also saws for edging lumber, cutting slabs, &c.

TUBBS & FRIDLEY.

PARKHURST & TUBBS, ELKLAND, PA.

Number of feet of white pine lumber, 100 M., $2,000; hemlock, 700 M., $5,600; ash, birch and maple, 10 M., $150.

Whole number of persons employed: 5 in mill and 2 outside.

Wages.—The head sawyer is paid $2 50 per day, the setter $2 00, and the others $1 25 per day. In operation 6 months in the year.

Characteristics of Establishment.—Our mill is a Blandy Portable. We have our mill yards established and move three times a year.

PARKHURST & TUBBS.

GEORGE D. KEENEY.

Keeneyville, Tioga county, Pa.

Number of feet of white pine lumber, 100,000 at $20, $2,000 ; hemlock, 800,000 at $6, $4,800 ; cherry, 5,000 at $25, $75 ; ash, 40,000 at $20, $800 birch, 10,000 at $10, $100 ; maple, 60,000 at $12, $720 ; basswood, 50,000 at $13, $650. Number of thousand shingle—hemlock, 200 at $2½, $500.

Wages paid, $1 50 per day. In operation 5 months during the year.

G. D. KEENEY.

C. E. SALMON & BROS., EAST CHARLESTON, PA.

Number of feet of white pine lumber, 7,176, at $14, $100 46 ; hemlock, 343,835, at $8, $2,750 68 ; ash, 15,512, at $14, $217 17 ; maple, 13,359, $14, $187 02 ; basswood, 55,997, at $12, $671 96 ; hickory, 7,580, at $14, $106 12 ; white wood, 6,344, at $15, $95 16 ; white oak, 2,202, at $15, $33 02.

Number thousand shingle : Pine, 40,000, at $4 50, $180 ; hemlock, 150,000, at $3, $450 ; oak, 18,000, $3 50, $63.

Whole number of persons employed, 8.

The number of each class employed and daily wages : Men, 7, at $1 50 per day ; boys, 1, at $1 per day. Time in operation during year, 3 months.

Characteristics of establishment.—Our mill is a steam circular sawmill, tubular boiler, 36 inches in diameter, 18 feet long ; engine, 9x18 stroke ; one small saw 36 inch and one 52 inch ; one shingle machine

C. E. SALMON & BROS.

ALONZO MITCHELL, CROOKED CREEK.

Number of feet of white pine lumber, 60,000 at $12 per M., $720 ; hemlock, 350,000 at $7 per M., $2,450 ; basswood, 25,000 at $12 per M., $300.

Whole number of persons employed, 10 ; men, 9, $1 25 per day ; boys, 1, 62 cts. ; time in operation during year, 36 days in saw mill.

ALONZO MITCHELL.

FRALIC BROS., LAMB'S CREEK.

Number of feet of white pine lumber, 200 M., $4,000 ; hemlock, 500 M., $3,500 ; other lumber, 50, $500. Lath, pine, 200 M., $300.

Whole number of persons employed : 10 ; daily wages paid, $1 25 and $1 50 ; time in operation during year, 6 months.

Characteristics of Establishment.—Our mill was built in 1870 ; is a steam mill of 40-horse power ; will saw 1,500 feet per hour. The most we have sawed in one year is 1,470,000 feet, and did not run it all of the time. We do not stock heavy now because the sale of lumber is so slow.

FRALIC BROS.

N. BEACH & SON, LITTLE MARSH P. O.

Number of feet of white pine lumber, 50,000 at $20 per M., $1,000; hemlock, 1,000,000 at $6 per M., $6,000; cherry, 10,000 at $25 per M., $250; ash, 40,000 at $20 per M., $800; basswood, 50,000 at $12 per M., $600; maple, 10,000 at $10 per M., $100; other lumber, 25,000 at $15 per M., $375.

Whole number of persons employed, 9.

The number of each class employed and daily wages:

OCCUPATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys.........	Time in operation during year...
Firemen	1	......	$1 28	....	313 days.
Miller	1	......	1 36	....	
Lever tender	1	......	1 00	......	
Screw tender	1	......	85	......	
Tail sawyer	1	......	85	....	
Edger	1	......	69	....	
Slab cutter	......	1	....	$0 40	
Teamster	1	......	96	....	
Teamster	1	.....	85	....	

N. BEACH & SON.

ENOCH BLACKMAN.

Floyd, Tioga county, Pa.

Number of feet of white pine, 50,000; value about $10 at the mill; hemlock, 200,000; value about $5 at the mill.

Whole number of persons employed: 1, $1 75 per day; in operation nine months.

During the extreme dullness and low prices of lumber I have confined my business to as small a limit as possible. My mill is a water power saw mill.

My chief business at present is farming and clearing land.

ENOCH BLACKMAN.

DOUD, WOODBURN & CO.,

Mainesburg, Tioga county, Pa.

Number of feet of hemlock, 175,000, $2,200 00; ash, 5,000, $75 00; maple, 3,000, $45 00; basswood, 15,000, $180 00.

Whole number of persons employed: 5; sawing, filing, &c., 2, at $1 35 per day; time in operation during year, 3 months.

The owners of the mill are D. R. Doud, J. S. Woodburn and L. M. Doud. We labor in the mill making total hands at work five men. Our business is all custom work. We charge $3 50 per thousand for sawing hemlock lumber, and $4 50 for hardwood.

DOUD, WOODBURN & CO.,
Per J. S. Woodburn.

POTTER COUNTY.

L. W. CRAWFORD, ROULETTE, POTTER CO., PA.

Number of feet of white pine lumber, 200,000, at $6,000; hemlock, 700,000, at $4,200; cherry, 450,000, at $15,000; ash, 50,000, at $1,000; birch, 10,100, at $160; maple, nominal, say $100.

Number thousand shingles, hemlock 150,000, at $300.

Whole number of persons employed, average of 10.

The number of each class employed and daily wages: 1 sawyer, at $2 per day; 1 foreman, at $2 per day; 3 teamsters, at $1 25; 6 mill hands, at $1 25 per day. Time in operation during year, 8 months.

Characteristics of establishment.—Water mill at Roulette, Potter county, Pa., and steam mill at La Fayette, M'Kean county, Pa. The latter mill burned in March last, and will be removed to Potter county; the same being fully repaired except as to buildings. In this mill I manufactured and re-sawed, to wit: Slate frames, school furniture stock, table legs, &c., together with shingles and lumber. At Roulette I have only made lumber and shingles, but have now a planer, &c. The mills will this year be combined, and in addition a hub and clothes pin factory will be added, should the J. S. and P. C. R. R. show any prospects of being completed to Coudersport.

The sections of country embraced within the limits of Potter contains sufficient to supply mills for many years, in hemlock, birch, beech, maple, and the cheap price of lands, invites manufacturers of wood to invest in that direction.

There is probably no other point in the States that could compete with a spool manufactory, if established upon the line of the Allegheny waters, and with proper outlets they will certainly find capitalists to embark, as Europe to day demands more than we can spare.

Respectfully, yours, &c.,
L. W. CRAWFORD.

LYCOMING COUNTY.

BARROWS & CO., WILLIAMSPORT, PA.

Number of feet of white pine lumber, 17,159,502, at $17 per M., $291,711 53 ; bought of other parties 10,165,349 at $17 per M., $172,810 95, total —27,324,851 feet, $464,522 48 ; lath, pine, 7,000,000, at $1 70, $11,900.

Whole number of persons employed ; about 109 men and boys, (boys on lath mills.)

Working, sawing lumber, 95 men, at $2 12½ per day ; (the $2 12½ per day includes foreman, engineer and assistant, also shipper ;) working, sawing lath, 9 men at $2 12½, 5 boys, at $1 25 per day ; foreman's wages $1,500 per annum ; engineer, $1,200 ; shipper and salesman, $1,800 ; in operation 8 months.

Characteristics of Establishment.—The firm of Barrows & Co., consists of Col. S. D. Barrows, of the late firm of Phinney & Barrows, and E. R. Payne, superintennent of the Beaver Mills and Lumber company, organized January 20, 1875 ; bought the entire stock of the Beaver Mills and Lumber company, consisting of about (10,000,000) ten million feet of white pine lumber, also seventeen million of white pine logs, to be rafted out of the Susquehanna boom in spring and summer of 1875. This stock was all manufactured into white pine lumber during the season, which was all piled, dried, sold and shipped, with the exception of eight millions feet which was destroyed in the great fire of the night of May 6, 1876. After the fire, arrangements were made and entered into with the firm of Reading, Fisher & Co., for a lease of their mills, tracks and piling grounds for a term of years, also purchased their entire stock of white pine saw logs, to be rafted out of the Susquehanna boom during the season of 1876, and other seasons, are now manufacturing the same into lumber.

E. R. PAYNE,
S. D. BARROWS.
Firm of Barrows & Co.

L. C. KINYON.

Manufacturer of sawed shingles, Williamsport, Pa.

Number of shingles—pine, 24-inch, 2,600,000 ; value, $20,800 ; pine, 18-inch, 1,000,000 ; value, $4,000 ; total, $24,800.

Whole number of persons employed, 18 ; 14 men, $2 25 per day ; boys, 4, $1 50 per day ; in operation 96 days.

Characteristics of Establishment.—Established in the year 1870, use 4 Parker shingle machines, the best in use for the manufacture of shingles ; usually run the mill six months in a year, and saw about five to six milions shingles each year. Capacity of mill about eight millions each year when run the full season.

L. C. KINYON.

P. B. MERRILL & CO., WILLIAMSPORT, PA.

Number of feet of white pine lumber, 7,082,008, $127,476 14 ; cherry, 1,959, $35 26 ; ash, 19,161, $344 90 ; poplar, 31,796, $572 33 ; maple, 3,006, $54 07. Number thousand lath, pine, 1,809,760, $2,714 55. Pickets, pine, 264,000, $2,376 00.

Whole number of persons employed : 46.

The number of each class employed and daily wages :

OCCUPATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Foreman	1	......	$4 25	......	5 mons.
Engineers	2	......	3 37	......	
Saw filers	3	......	3 00	......	
Sawyers	9	......	1 87	......	
Lumber pilers	4	......	2 25	......	
Common laborers	17	......	1 66	......	
Watchmen	2	......	1 75	......	
Boys	......	9	......	$0 85	

Characteristics of Establishment.—Steam saw mill, (brick,) 61x85 feet, with wing 20x70 feet, for boilers and engine. One 90-horse power engine, three gates containing 57 saws, gang lath mill, picket machine and edger, one jack mill for jacking logs from river into basin with 25-horse power engine.

P. B. MERRILL & CO.

FINNEY, WILLIAMS & CO., WILLIAMSPORT, PA.

Number of feet of white pine lumber, 5,696,131, value $91,138 10; hemlock, 400,000, value $3,200; cherry, 5,000, value $125; ash, 50,000, value $1,250; poplar, 300,000, value $6,000. Number of thousand shingle—pine, 1,179,000, value $8,684.

Whole number of persons employed, 6; shippers, 2, $2 per day; laborers, 4, $1 50; time in operation during year, 11 months.

Characteristics of Establishment.—Our lumber is stocked, driven and manufactured by the thousand. The firm only employ men for handling and shipping the lumber; they are part of the concern of Bowman, Finney & Co., who are lumber manufacturers and who take our logs at the boom, manufacture them into lumber and put it upon the piling sticks from which we handle it with our yard crew when it has become sufficiently seasoned.

FINNEY, WILLIAMS & CO.

B. C. BOWMAN & CO., WILLIAMSPORT, PA.

Number or feet of white pine lumber, 3,500,000, value $63,000; hemlock, 250,000 feet, value $2,000.

Whole number of persons employed: 6.

Shipping lumber, 6 men, at $2 per day; in operation 12 months.

B. C. BOWMAN & CO.

BOWMAN, FINNEY & CO., WILLIAMSPORT, PA.

Number of feet of white pine lumber, 13,700,000, value $220,000; hemlock, 1,000,000, value $7,000. Lath—pine, 2,200,000, value $3,500; pickets, 550,000, value $5,000.

Whole number of persons employed, 70; men, 67, $2 per day; boys, 3, $1 25; time in operation during year, 7 months.

BOWMAN, FINNEY & CO.

STARKWEATHER & MUNSON, WILLIAMSPORT, PA.

Number of feet of white pine lumber, 5,094,517, value $91,701 30; lath, pine, 1,533,100, value $2,689 22.

Whole number of persons employed: 44.

OCCUPATION.	No. of men...	No. of boys.....	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year...	Remarks.
Engineer....................	1	......	$3 50	......	90 days.	
Fireman....................	1	......	2 25	......	"	
Filers......................	2	......	4 00	......	"	
Sawyers....................	8	......	2 25	......	"	
Do....helpers............	18	......	1 75	......	"	
Lath sawyers...............	2	.....	2 50	......	"	
Do........helpers........	......	3	....	$1 00	"	
Pilers......................	4	......	2 50	......	"	
Edgers.....................	3	......	2 00	......	"	
Counter....................	1	......	2 00	......	"	
Foreman....................	1	......	....	......	"	$1,500 per annum.

Characteristics of Establishment.—The saw mill comprises one round or slabbing gang, one flat gang, one Mulay, one double Edger, one lath mill and one machine for cutting box lumber, the whole being driven by an 80-horse power steam engine, with a daily average of 56,600 feet of lumber, (board measure,) and 17,000 plastering lath. We have in addition to the saw mill, a planing mill, to run which we employ one foreman, one engineer, one counter, two sawyers, (for ripping lumber,) one boy to feed planer, and one watchman. In this mill we manufacture flooring, car siding, the various kinds of siding for house building, and the surfacing or planing of wide lumber.

To the hands employed in the planing mill, we pay the foreman $75 per month; 1 engineer, $2 25 per day; 1 counter, $2 25 per day; 2 sawyers, $2 per day each; 1 boy, 75 cents per day; 1 watchman, $1 75 per day, and 1 book-keeper, $1,000 per annum.

STARKWEATHER & MUNSON.

CHARLES L. LYON & CO., WILLIAMSPORT, PA.

Number of feet of hemlock lumber, 2,000,000, value $16,000; ash, 30,000, value $750.

Whole number of persons employed, 9; daily wages, $2; time in operation, 7 months

Remarks.—We employed one superintendent, at $800 per year; one teamster, at $30 per month; seven men in mill, at an average of $2 per day.

Characteristics of Establishment.—Our mill is a steam circular with one edger; capacity $20,000 per day; situated in Cascade township about 20 miles from Williamsport.

CHARLES L. LYON & CO.

WOOLVERTON & TINSMAN, WILLIAMSPORT, PA.

Number of feet of white pine lumber, 9,000,000; value, $140,000; lath, pine, 2,800,000, value $4,200.

Whole number of persons employed: about 150.

OCCUPATION.	No. of men........	No. of boys........	Daily wages paid men..........	Daily wages paid boys..........	Time in operation during year......	REMARKS.
Cutting timber in woods....	94	3	$1 60	$0 90	8 months.	The wages are about an average, and charging for board.
Manufacturing lumber, shingles, &c	47	6	1 75	90	6 months.	

Characteristics of Establishment—We have mill capacity of about fifteen million feet. In 1873 we sawed over fourteen million, in 1874 we reduced to twelve million feet, in 1875 reduced to nine million feet, to-day we find our yards filled and no demand. The prices of lumber have declined since 1873 about six or seven dollars per M. Western lumber is being delivered to eastern towns in Pennsylvania at much less figures than can be sent from here even should we sell without one dollar profit. We think there are very few firms who are making any profit upon lumber in this valley, but are merely getting the price of stumpage out of their timber. Taxes on timber lands have advanced from five to eight times the amount they were two or three years ago, with no redress for us. But we think the worst feature of all is the introduction of western lumber in this market at such low rate of freight. Our future prospects for a year or two years to come is not at all encouraging. We find no difficulty in hiring men at present, good men can be had for common labor at $1 25 to $1 50 per day.

WOOLVERTON & TINSMAN.
Per R.

BROWN, EARLEY & CO., WILLIAMSPORT, PA.

Number of feet of white pine lumber, 7,500,000, value, $120,000; paling pine, 166,340, value, $1,700. Lath—pine, 2,709,000, value, $4,605 30.

Whole number of persons employed: 77.

The number of each class employed and daily wages:

OCCUPATION.	No. of men	No. of boys	Daily wages paid men	Daily wages paid boys	Time in operation during year
Foreman	1		$5 00		1 year.
Engineer	1		5 00		"
Fireman	1	1	2 00	1 25	6 months.
Head sawyers	7		2 00		"
Tail stockers	17		1 75		"
Filers	3		3 25		"
Board pilers	8		2 50		"
Laborers	26	6	1 75	1 25	½ work all year, balance 6 months.
Lath sawyers	3	1	2 75	1 75	6 months.
Counters	2		2 25		One 6 months, the other 1 year.

BROWN, EARLEY & CO.

J. W. FRECK & SON.

Manufacturers of pine and hemlock lumber, lath and pickets.

Number of feet of white pine lumber, 1,098,081, value $15,373 13; hemlock, 568,916, value $5,120 24.

Lath: Pine, 530,900, valued at $849 44; pickets, hemlock, 16,080, valued at $128 64.

Whole number of persons employed, 20.

The number of each class employed and daily wages: Mill hands, 16 men at $2 26 per day, and 1 boy at $1 per day; time in operation during year, 80 days; Shipper and clerk 1, at $1 75 per day; time in operation during year, 142 days; car loaders, 2 men, at $1 75 per day; time in operation during year, 47 days.

Remarks.—Stocking is done by contract, and man at boom paid in connection with another firm, by the year.

Characteristics of Establishment.—Steam mill, 60 inch circular, double edge; lath and ricket machines. Have now attached planer and re-saw.

J. M. FRECK & SON,
Montoursville, Lycoming county, Pa.

BODINE & WARN, HUGHESVILLE, PA.

Number of feet of white pine lumber, 300,000, value $5,400 ; hemlock, 1,200,000, value $8,400 ; total, $13,800. Number thousand shingles, pine, 400,000, value $3,200 ; hemlock, 75,000, value $300 ; total value shingles and lumber, $17,300.

Whole number of persons employed : 12 ; daily wages paid, $1 88⅓ ; time in operation during year, 7 months.

BODINE & WARN.

JOHN SLACKHOUSE, UNITYVILLE, PA.

Number of feet of hemlock lumber manufactured, 60,000, value $240 ; also manufactured 5,000 M. pine shingles and 5,000 M. hemlock, value $1 50 and $2 per thousand ; employ one man by the year ; time in operation in 1875, four months.

THOMAS LOWE, LAIRDSVILLE, PA.

Manufactured 30,000 feet white pine lumber, and 100,000 feet hemlock, value not given ; also 38,000 white pine shingles, value not given.

Whole number of persons employed, 4 : two men at 62½ cents per day and board ; two boys at 37½ cents per day and board ; in operation three months during the year. Mill situated on a small stream called "Sinking Run." Timber pretty well cut.

MICHAEL KELLY, KELLYSBURG, PA.

Number of feet of hemlock lumber, 2,000,000, $18,000 ; cherry, 20,000, $600 ; ash, 30,000, $750 ; poplar, 40,000, $800.

Whole number of persons employed : 12. Number of men, 12 to 15 ; daily wages paid, $1 00 ; in operation all the time.

MICHAEL KELLY.

DANIEL RIDER, LAIRDSVILLE, PA.

Number of feet of hemlock 350,000, market value, $7 ; ash, 12,000 feet, $14 ; birch, 12,500 feet, $14 ; beech, 10,000 feet, $14 ; chestnut, 20,000 feet, average $14 ; oak, 15,000, $15 ; hemlock shingles, 250,000, $2.

Whole number of persons employed : 5 to 10 men ; daily wages paid each, $1. In operation from 3 to 4 months.

Characteristics of Establishment.—Steam mill containing 25-horse power engine, circular saw, with edger. My mill being located in the centre of the tract, we of course do our stocking to a great extent in the winter, and run the mill in the spring long enough to saw it out, and generally speaking, cut 40,000 feet per week; beside the winter stock, we cut some considerable amount of bill stuff, of which I cannot give a correct account.

DANIEL RIDER,
Per WESTCOTT.

JAMES STACKHOUSE, UNITYVILLE, PA.

Manufactuerd 20,000 feet hemlock, worth $5 per M., also 1,000 feet birch, worth $7. Moved my mill, and only run it enough to try it. Number of men employed, 3. Wages paid, $1 40 per day.

RENTZ & ADENHOLD, WARRENSVILLE, PA.

Manufactured 45,941 feet of white pine lumber, valued at $551 29; 18,000 feet hemlock, $144; oak, 3,200 feet, $480; $1,175 29.

Whole number of men employed, 2. Wages, $2 per day. In operation 25 days.

GEORGE W. REESE, LAIRDSVILLE, PA.

Manufactured 75,000 feet hemlock, valued at $375, also 30,000 shingles, valued at $52 50.

Employed one man for seventy days and one boy for twenty. Paid man 75 cents per day and boy 60 cents per day.

R. C. & J. R. CLENDENIN, TROUT RUN, PA.

Number of feet of white pine lumber, 5,000, value $60; hemlock, 100,000, value $800.

Whole number of persons employed: 2 men, at $1 50 per day; time in operation during year, 3 months.

R. C. & J. R. CLENDENIN.

A. S. TURNER, ELMIRA, N. Y.

Pine and hemlock lumber and lath, at Trout Run, Pa.

Number of feet of white pine lumber, 930,887, value, $13,963 30 ; hemlock, 1,669,265, $13,354 12. Lath—hemlock, 277,500, $550.

Whole number of persons employed : Average 22 per month.

The number of each class employed and daily wages :

OCCUPATION.	No. of men........	Daily wages paid men............	Time in operation during year......	REMARKS.
Foremen	2	$3	12 months.	An average statement of time, men and wages per month for the year.
Sawyers	2	225	6 "	
Setters	2	200	6 "	
Edger	1	200	6 "	
Pilers	2	175	6 "	
Others	13	150	12 "	

A. S. TURNER.

PHILIP J. VANDINE, LAIRDSVILLE, PA.

Manufactured 60,000 feet hemlock ; value $360 ; 2,600 feet birch ; value $26 ; total, 62,600 feet ; value, $386. Also manufactured 25,000 shingles, pine, valued at $125 ; 20,000, hemlock, $60 ; total value of lumber and shingles, $471. Employed 1 man for 25 days. I have let my mill stand idle for the want of logs, and turned my attention to clearing and farming.

JOHN R. SWISHER, UNITYVILLE, PA.

Manufactured 150,000 feet of hemlock ; value, $750 ; employ two men for two months ; daily wages paid men, 75 cents and board.

Characteristics of Establishment.—A small water mill on the head waters of Little Muncy creek, Franklin township. Time not engaged in the mill I spend in farming and clearing up land.

C. S. GREEN, ROARING BRANCH, PA.

Number of feet of hemlock lumber, 800,000, value, $6,400 ; cherry, 40,000 feet, $1,000 ; ash, 50,000 feet, $1,300 ; maple, 25,000 feet, $250 ; bass, 100,000 feet, $1,500.

Whole number of persons employed : 5 men.

Head sawyer, 1, $1 75 per day; fireman, 1, $1 75; tail sawyer, 1, $1 25; piler, 1, $1 25; teamster, 1, $1 50; in operation 8 months.

Logs are all purchased delivered on the stream, and are floated to the mill.

Characteristics of Establishment.—One Mulay saw mill with one Mulay saw, and one edger; steam power engine, 9 by 24 in.; 2 boilers; cylinder 26 in. by 35 ft. Lumber only manufactured. Situate near the mouth of Roaring Branch; logs are floated a distance of 3½ miles on this stream; lumber is delivered on cars at railroad station, one-half mile from mill.

C. S. GREEN.

JAMES M. BOWMAN, PICTURE ROCKS, LYCOMING CO., PA.

Manufactured by Martin Van Buskirk.

Number of feet of white pine lumber, 75,000; not sold; hemlock, 400,000 feet; not sold.

Number thousand shingle, 100,000, value, $600.

Whole number of persons employed, 6.

The number of each class employod and daily wages: Engineer, 1, at $2 per day; time in operation during year, 3 months; sawyer, 1, at $2 per day; time in operation during year, 5 months sawing; common hands, 4, at $1 75 per day.

Characteristics of Establishment.—Steam mill with circular saw with edger, cut off slab saw and shingle mill.

MARTIN VAN BUSKIRK.

E. W. SWEET, CARPENTER, PA.

Number of feet of hemlock lumber, 1,000,000, value, $10,000; cherry, 25,000, $5,000; ash, 50,000, $15,000; birch, 5,000, $1,000; maple, 100,000, $18,000; other lumber, 100,000, $15,000; 500 cords tan bark, $2,500.

Whole number of persons employed: 25.

Number of men, 25; daily wages paid men, $1 50; time in operation, whole year.

Characteristics of Establishment.—Mulay steam mills. Established on Williamsport and Elmira N. C. R. W, at Carpenter Station.

E. W. SWEET.

J. M. & M. WOLFE.

Number of feet of white pine lumber, 500,000, $6,000 ; hemlock, 100,000, $1,000 ; other lumber, 25,000, $250. Number thousand shingles, pine, 200,000, $1,200.

Whole number of persons employed : 10 ; 10 men, at $1 60 per day ; 1 boy, at $1 00 per day ; time in operation during year, 10 months.

Remarks.—We stock and manufacture our own timber. In addition to our lumber business we have a grist mill that we do about $5,000 of a business ; also a grocery store of about the same ($5,000.) The mill power is water, with a capacity of 1,000,000 feet, at the junction of Little Pine and Big Pine creeks, on the contemplated route of the Jersey Shore and Pine Creek Railroad, in the center of a mineral region if the facilities for carrying to market is once established. The laboring classes are generally intelligent, industrious and well satisfied with their conditions.

J. M. & M. WOLFE.

C. C. MERRELL, TEXAS, PA.

Manufacture 100,000 feet hemlock, value $600 ; 10,000 feet ash, $100 ; 2,000 feet maple, $16 ; 5,000 feet bass wood, $40, also 100,000 hemlock shingles, $200—total, $956.

Myself and boy does the work. We make one raft a year ; draw the lumber ten miles to Pine creek, and from thence run it down to Marietta, where we get about $8 per thousaud. My hemlock shingles I sell at the mill. I am also engaged in farming.

CLARLES L. LITTLE, TIVOLI; PA.

Manufacture 53,000 shingles, (pine,) value $260 ; 30,000 shingles, (hemlock,) $120—total, $380.

Employed one sawyer for 36 days at $1 50 per day

Characteristics.—My mill is located on a small stream, and not having water to saw more than six weeks or two months in a year.

ANNUAL LUMBER REPORT.

Stock on hand January 1, 1870.

YARDS.	Pine.	Hemlock.	Lath.	Pickets.
Williamsport	134,166,157	6,098,000	27,627,300	1,653,065
Lock Haven	58,500,000			
Baltimore	3,500,000			
Port Deposit	1,500,000			
Philadelphia	11,000,000			
Total, January 1, 1870	208,666,157	6,098,000	27,627,300	1,653,065
Do.....do....1, 1877	198,044,568	29,198,366	39,372,050	3,599,041
Difference	10,621,589	23,100,366	11,744,750	1,945,976

Stock on hand January 1, 1871.

YARDS.	Pine.	Hemlock.	Lath.	Pickets.
Williamsport	122,505,694	5,737,000	33,604,800	2,646,150
Lock Haven	22,312,000		2,289,000	720,000
Baltimore	3,000,000			
Port Deposit	950,000			
Philadelphia	10,249,971			245,133
Total, January 1, 1871	159,017,665	5,737,000	35,893,800	3,611,283
Do....do....1, 1877	198,044,568	29,198,366	39,372,050	3,599,041
Difference	39,026,903	23,461,366	3,478,250	12,242

Stock on hand January 1, 1872.

YARDS.	Pine.	Hemlock.	Lath.	Pickets.
Williamsport	50,550,603	2,832,500	12,687,600	1,687,815
Lock Haven	7,179,000		710,000	410,000
Baltimore	2,250,000			
Port Deposit	5,250,000			
Philadelphia	13,486,280			472,890
Total, January 1, 1872	78,715,883	2,832,500	13,397,600	2,570,705
Do....do 1, 1877	198,044,568	29,198,366	39,372,050	3,599,041
Difference	119,328,685	26,365,866	25,974,450	1,028,336

Stock on hand January 1, 1873.

YARDS.	Pine.	Hemlock.	Lath.	Pickets.
Williamsport	137,949,907	8,807,440	39,966,700	2,273,280
Lock Haven	32,638,741	1,930,000	5,163,000	1,503,000
Baltimore	2,000,000			
Port Deposit	4,000,000			
Philadelphia	10,818,990			
Total, January 1, 1873	187,407,638	10,737,440	45,129,700	3,776,280
Do.....do....1, 1877	198,044,568	29,198,366	39,372,050	3,599,041
Difference	10,636,930	18,460,926	5,757,650	177,239

Stock on hand January 1, 1874.

YARDS.	Pine.	Hemlock.	Lath.	Pickets.
Williamsport	220,961,922	19,872,444	58,541,100	3,587,655
Lock Haven	34,919,444	3,460,652	4,905,000	1,476,000
Baltimore	1,350,000			
Port Deposit	5,200,000		600,000	45,000
Philadelphia	9,027,948			
Total, January 1, 1874	271,459,314	23,333,096	64,046,100	5,108,655
Do.....do....1, 1877	198,044,568	29,198,366	39,372,050	3,599,041
Difference	73,414,746	5,865,270	24,674,050	1,509,614

Stock on hand January 1, 1875.

YARDS.	Pine.	Hemlock.	Lath.	Pickets.
Williamsport	182,267,657	14,015,974	38,219,054	2,861,965
Lock Haven	32,622,057	1,771,800	2,376,200	844,200
Baltimore	2,000,000			
Port Deposit	4,200,000	2,300,000		
Philadelphia	13,659,278	1,448,565	41,000	122,240
Total, January 1, 1875	234,748,992	19,536,339	40,636,254	3,828,405
Do.....do....1, 1877	198,044,568	29,198,366	39,372,050	3,599,041
Difference	36,704,424	9,662,027	1,264,204	229,364

Comparative Statement—Stock on hand January 1, 1876.

YARDS.	Pine.	Hemlock.	Lath.	Pickets.
Williamsport	194,604,162	22,021,910	33,768,154	1,554,506
Lock Haven	32,311,700	4,450,000	3,124,000	936,015
Baltimore	1,500,000			
Port Deposit	4,000,000			
Philadelphia	6,927,150	712,251	675,000	101,180
Total, January 1, 1876	239,343,012	27,184,161	37,567,154	2,591,701
Do.....do....1, 1877	198,044,568	29,198,366	39,372,050	3,599,041
Difference	41,298,444	2,014,205	1,804,896	1,007,340

Estimate of lumber in the Williamsport market, January 1, 1877, as furnished officially to the West Branch Lumberman's Exchange.

YARDS.	Pine.	Hemlock.	Lath.	Pickets,
B. C. Bowman & Co	2,907,800	724,400	....	....
B. H. Taylor & Son	1,500,000	600,000	500,000	50,000
F. Coleman	4,768,330	97,424	1,516,200	67,980
Brown, Earley & Co	7,715,500	212,200	2,575,000	108,600
Ten Eyck, Emery & Co	2,000,000	53,000	....	....
Wolverton & Tinsman	4,900,000	900,000	1,040,000	60,000
Thompson, Housel & Co	2,511,300	2,523,000	277,000	250,000
Geo. W. Quinn—(estate)	3,077,000	74,000	1,200,000	100,000
P. B. Merrill & Co	5,865,950	75,000	1,708,700	249,160
Eder, Housel & Deemer	6,000,000	....	3,382,800	82,360
Taber & Goodrich	....	75,000	....	....
White, Lentz & White	13,489,911	....	4,294,250	163,500
Canfield & Colton	5,000,000	3,000,000	1,600,000	....
Finley, Young & Co	8,850,000	....	2,400,000	130,000
Finney, Williams & Co	2,447,500	760,000	....	....
Barrows & Co	5,852,455	....	2,263,000	96,310
Slonaker, Howard & Co	4,000,000	1,000,000	1,200,000	150,000
John A. Otto & Sons	4,395,000	291,000	....	....
Thomas P. Merritt	3,420,000	105,000	200,000	....
Starkweather & Munson	4,457,088	210,541	2,750,000	....
Hebard & Smith	2,683,000	1,030,000	518,000	100,000
Dodge, James & Stokes	25,917,743	4,374,725	2,062,000	81,660
H. Merriman & Son	7,175,000	....	656,000	120,000
Reading, Fisher & Co	800,000	....	....	....
P. Herdic & Co	5,241,467	2,019,976	....	....
Lutcher & Moore	200,000	5,000,000	....	35,000
John DuBois	4,920,717	780,050	173,500	....
Bowman, Finney & Co	400,000	....	953,000	330,000
Ranstead & Flynn	....	....	....	....
Reading, Fisher & Reading	3,562,005	....	....	....
Beaver Mills & L. Co	17,000,000	....	5,000,000	90,000
Total, Williamsport	161,057,763	23,905,316	36,269,450	2,264,570
" Lock Haven	25,371,194	3,307,000	2,895,600	1,128,600
" Baltimore	4,000,000	....	....	....
" Port Deposit	1,097,000	1,000,000	150,000	91,000
" Philadelphia	6,518,608	986,050	57,000	114,871
Total, January 1, 1877	198,044,568	29,198,366	39,372,050	3,599,041

The above is a correct statement of the amount of Susquehanna lumber, lath and pickets in first hands, in the above named markets, on the first day of January, 1877.

F. E. EMBICK, *Secretary.*

EDER, HOUSEL & DEEMER, WILLIAMSPORT, PA.

Number of feet of white pine lumber, 11,315,265, value, $169,728 97; hemlock, 90,535, $633 74; shingles, 4,750,000, $26,176 58; lath—pine, 4,294,000, $6,441.

Whole number of persons employed: 84 men in the mills and yards, and say 50 men in the woods.

OCCUPATION.	No. of men......	No. of boys......	Daily wages paid men	Daily wages paid boys..........	Time in operation during year.....	REMARKS.
Shingle mill	10	5	$2 25	$0 75	5 months.	
Saw mill..............	30	5	2 15	90	6 months.	
Piling lumber.........	6	....	2 50	......	6 months.	
Loading lumber	10	....	1 50	......	Av'ge 10 mos.	Part of the time we do not work as we do not have orders all the time.
Lath mill	10	5	....	......	6 months.	
Foreman *	1	....	....	......	....	
Engineer †...........	1	....	....	......	....	
Bookkeeper ‡.........	1	....	....	......	....	
Lumber shipper §.....	1	....	....	......	....	

* By the year, $1,200. † By the year, $1,200. ‡ By the year, $1,000. § By the year, $1,200.

Characteristics of Establishment.—Our mill is composed of 1 large slabbing gang, 1 large flat gang, 1 pony gang and 2 Mulays, 1 double edger, 1 single edger, 1 gang lath mill, with picket header. Capacity, 16,000,000 per year, of 7½ months. Shingle mill containing 2 large Valentine machines, cut off for both machines, 2 bolters, rip saws, slitting saws and machinery complete. Capacity, 70 M. per day, or 12,000,000 per year, of 7 months running. We have not been running up to the capacity of the mill (because the market is very dull owing to freight discriminations against us from the west. If the "trunk lines" from the west continue, the productions of the West Branch valley will fall off from year to year.)

Our mills are both steam. Principal market eastern Pennsylvania, New Jersey, some going into Maryland and Delaware.

EDER, HOUSEL & DEEMER.

SOCIAL CONDITION.

The close of the Centennial year finds the United States with a population of 40,000,000. The great questions of constitutional government, in relation to the nation as a whole or in relation to the rights of individual States, have been finally settled. The work of the future legislator will not be the discussion of old problems or the enacting of more statutes, but rather the modifying of past laws and the annulling of many that have proven bad.

The increase of population presents new features in our social condition which merit and demand the keenest observation of the statesman and the profoundest study of the lawgiver. Our overcrowded cities and manufacturing towns, with their distress, resulting from lack of employment and low wages, causing gaunt poverty to stalk with cruel strides through the land, make communism and socialism ask legislators many a pertinent question ; hence the relations of master and servant, employer and laborer, capital and wages, are now engaging the highest thought of economist and lawgiver.

Were man a mere animal, whose birth would be almost the end of his existence, his condition would be uniform, without progression or retrogression, and class distinction would amount to little ; but having capabilities which admit of no standstill, in his aggregate capacity he makes society consist of many grades.

The right of the "fittest" to rule ; that is, of the strongest, whether on account of social grade or protected wealth, will not apply in a government like ours, which is supposed to be the product of the *whole* people. It is, therefore, both unwise and inhuman to say that the lower grades of our social system should be content with the wherewithal to eat, drink and be clothed, without any desire on their part, or means of obtaining that leisure from toil which alone admits of mental, moral and physical improvement. Equally unwise, and having an equal tendency to destroy our form of government and hinder our prosperity, would be the clothing with absolute authority a privileged grade of society, rich either in material wealth or superior culture ; this would prove eventually an oligarchy worse than a despotism.

We have arrived at that critical period in our history when the antagonism between rich and poor, learned and illiterate is making itself fearfully manifest. In the matter of capital and labor, we find the former organized and protected, endeavoring to obtain the greatest amount of labor for the least pay, while the latter organized for protection in trades unions, &c., is striving for an opposite result. This antagonism necessarily works the greatest injury to labor, causing the working classes either to retrograde or become unmanageable.

In all civilized societies the fortunes and properties of each individual are joined to those of his brother. Each man is to a large extent his brother's keeper; he is a link in a vast social chain, any weakening of which would lessen the strength of the whole. The strength of society is of course its harmony, but this harmony must not be the stolid acceptance of circumstance or condition, but rather a social order in which unrest and dissatisfaction with unceasing toil seeks for a nobler development and a brighter future. Every man's motive power consists in what he lacks—it is the striving after this which develops his capabilities for self-improvement and self-government. The great question of the day then, and which will never be solved by partisan legislation, is to so unfetter capital that it will produce the most, and to so protect labor that it will get its just proportion of what is produced, in other words, to lessen the antagonism between capital and labor, so that the profits of both will be in equitable proportion. Unless this is done, there will be in the future a government of class, representing associated, organized and privileged capital, and a consequent stand still or enforced lowering of the condition of the laboring many. Without discussing this broad question in all its bearings, it is our purpose to look at the condition of the laboring classes in our own State at the present time, the cause of such condition, and a few hints as to the remedy. The year 1876 has been an exceptional one in our history without considering political complications and excitement. The Centennial year finds us with the same fertile fields, the same broad vallies, the same furnaces and teeming mines, the same laborers and the same capital as in 1870, but all this unemployed wealth fills not the mouths of the hungry with bread. Wealth have we in abundance, but it is not being developed or employed by productive industry. We have since 1870 had a large increase of population creating more wants of food and clothing, yet there is a superabundance of unemployed labor and unemployed labor cannot buy.

Unfortunately statistics are so meagre that nothing definite can be ascertained of the laboring classes, as a whole: for instance, the exact number out of employment, their social condition and the average amount of wages paid for their labor. That thousands of skilled workmen are out of employment is a well-known fact, when we find 5,000 mechanics in the city of Philadelphia, having exhausted their surplus earnings, forced through absolute necessity to seek public charity, we have the proof positive that great distress prevails among the laboring classes of our State.

Then, too, the swarms of tramps, many of them skilled in all manner of handicraft, who are roaming the country, speak a sad tale of homelessness, want and destitution.

In all large communities there is always more or less suffering resulting from lack of employment, but the distress of 1876 is confined to no particular locality, but is general. Want is most marked in the coal regions. In Scranton, a representative mining city, for instance, the distress is not only pitiful but absolutely alarming. Men who could get $2 50 to $3 per day at the commencement of the year are now on the verge of pauperism, and willing to work for 50 cents per day if they can get anything to do. Men, who a year ago would have blushed for shame to ask charitable assistance of any kind, now actually want the common necessaries of life. The moral degradation, the loss of manhood, the crime and even suicide, incident to this state of affairs, is working a harm to the body politic which figures cannot measure.

Mr. Gowen, President of the Reading railroad company, in a speech a few years ago on the wages in the mining regions, said that the average yearly wages of miners was $532, or $44 33+ per month, a sum barely sufficient to support mere existence. When we reflect that this sum was paid only when the "*mines were in full operation*" and labor in demand, we can easily imagine the distress when work has ceased altogether. It being impossible to reserve a surplus from such scanty earnings for a rainy day.

This scale of wages is not exceptional or confined to any particular class of workmen. From statistics at our command it can be readily seen that there has been a *distressing* decrease in the price of labor. It is an aphorism of the economist that that country is most prosperous where labor commands the highest reward; the converse being equally true, we can measure the condition of our country's prosperity. From reports received from various parts of the State and published with this article, we find the average yearly wages of different kinds of workmen barely $500 00. Out of this amount but a small surplus, with the most rigid economy, can be saved.

Taking the year 1870 for comparison, when wages were the highest, and production in proportion, we find a general decline in labor for subsequent years, till at the present time, the reduction amounts to more than 50 per cent. Estimating the price of labor at its *real* value, that is according to what it will purchase, this reduction is relatively large, as the actual cost of living, rent, fuel, clothing, &c., is quite as high as in 1870. Looking carefully then at the condition of the laboring classes for the last year, finding thousands out of employment, wages reduced, capital withdrawn from productive industry, while the necessaries of life are proportionately high, we naturally inquire the cause and seek for a remedy.

From the time society was organized, there has been a tendency to concentrate power in the hands of a privileged few. Civilization, with all its ennobling influences, will not and cannot prevent or exclude the power of wealth or superior education from cramping or circumscribing the laboring class. Self-interest binds together the rich, who by monopolies, form an organized class for the control and protection of capital. England has preserved her priviledged aristocracy by her laws of primogeniture; we by monopolies, protected in a large measure by political power, are creating a moneyed dynasty fatal to general prosperity and the march of human improvement. That there has been, and is now, a tendency in this country to wed money to political power is unquestionable; it is heard in the demagogue's cry to the bondholders to support this man or that through self-interest. And thus practically a moneyed aristocracy is made to choose our rulers. This condition of things must necessarily weigh heavily upon the laboring classes.

Let us look at the facts as presented in the history of countries. In England the fee simple of the whole Island is in the hands of a few thousands—so that the capitalist and land-owner hold all political power; the taxes, therefore, are so imposed that the poor many pay them. As a result we find a few with millions, the many with a bare existence, and *one-fifteenth of the whole population in alms-houses.* In France we find that in 1850, out of 37,000,000 people, 250,000 were rich, 500,000 in comfortable circumstances, 6,500,000 badly off, 4,000,000 in absolute poverty, and the remainder suffering and actually starving.

This country to be prosperous, must not imitate the bad examples of the past, and therefore our legislators should see to it that the money power of the country is kept separate from political power, so far as unjust protection is concerned. Legislation should be negative in its character, neither favoring capital nor labor, but leaving to each the right to work out the problem of its own interests. All artificial aids are weakening in the end. A forced growth never has a sturdy vitality. As a rule we are governed too much, and put too much faith in political systems, and rely too much upon the efficacy of legal enactments. "Heaven helps those who help themselves," is a homely adage which experience proves to be true. The best that can be done for the individual man is to permit him to develop his capabilities according to the tendency of his inclinations—not to make him a forced product of legislative enactment. The same can be said of capital; let it be unfettered—do not cripple or favor it by legislation and trust to labor to obtain from the increased productiveness of free capital its reasonable and just share.

When labor with its strong thews and sinews or with the busy brain of its skilled workmen, feels that it is not running an unequal race with capital, ambition will spur it on till we find the nation's best and most honored manhood among a contented and prosperous working population.

Our unstable currency has had for years a depressing effect upon business activity, and consequently upon labor wages. Insecurity and uncertainty necessarily withdraw capital from productive industries. The panic of 1873, brought the country face to face with the dangers of its financial system and to a contemplation of its weakness. This panic gave rise to doubts so great, that capital was withdrawn from manufacturing, and centered in the banks. Money thus centered was largely invested in bonds, mortgages and judgments. The manufacturer and business man had to borrow at such ruinous rates, consequent upon the uncertainty and fluctuations in the money market, that he closed his workshop and store. The laboring man, as usual, was the chief sufferer. As there is not so intimate a relation existing between wages and prices, that they rise and fall proportionately, and as the latter are affected sensitively by currency or wild speculation, we must recognize the fact that the workingman is especially interested in a stable condition of finance. Until this stability in currency or finance comes, insuring security, so that the calculations of the capitalist and laborer can be based upon certainties, we shall find capital ever unwilling to employ and labor unengaged. Until the day of ideal patriotism arrives, our financial security will depend altogether upon the whim, caprice, and possibly, the rascality of Wall street; and the ever to be dreaded recurrence of Black Fridays; in the meantime, the parties most interested in absolute security can charitably starve or employ their abundant leisure in unavailing grumbling, and the country be permitted to grow magnificently poor.

We have said before that the wages of the laborer depend upon production. Double the amount of productiveness, and there will be twice the amount of profits to be, under equal laws, divided between the capitalists and laborers. That wages increase with productiveness is an axiom in political economy. We find in Macauley's History of England, that in the generations which preceded the revolution (1688,) a workman employed in the great staple (woolen) manufacture of England, thought himself fairly paid if he gained six shillings a week. One hundred and twelve years later we find wages of skilled workmen doubled, rising from 2s 6d to 5s 8d per day, thus showing that the profits accruing from increased production compelled and afforded the paying of better wages. With us, now, production is at its minimum and wages correspond. Aside from a fluctuating currency and protection of capital, what *other* causes tend to decrease productiveness, and of course, lessen wages?

1st. Industry must be free. Monopolies stimulate a false industry and cause a misdirection of energies, talents and labor, thus not only decreasing general productiveness, but also causing an unequal distribution of profits. That we have, through unequal protection built up monopolies, is a fact so patent, that he who runs may read, and what political economist can calculate their disastrous effect upon the general prosperity of the country.

2d. Above all other causes which affect productiveness, disqualifying labor and reducing wages in this country, the chief ones are governmental extravagance and taxation. These causes so seriously interfere with general saving, security of property and wages, that they deserve most careful consideration.

For a long period of years millions upon millions of dollars have been unnecessarily expended by the national government upon forts and ships, or wasted in affluent prodigality. Extravagance squanders the national means and makes us poor indeed. We have paid in taxes since 1860 the enormous sum of $6,000,000,000. This is a terrible drain upon the resources of the country and upon its productive industries It has been approximately ascertained that the annual savings of the United States amount to $500,000,000. When we reflect that this allows barely $13 00 as the per annum saving of the individual from all his labor, we readily see how small a surplus is added to productive capital. Taxes working an insecurity to property, diminish the tendency of capital to increase and invest itself and also lessen the diligence and efficacy of labor. What advantage hath a man if the profits of all his labor pass into the hands of the tax collector. On this subject we transcribe certain thoughts from the Philadelphia *Ledger*, according with our own :

"Mere labor cannot produce wealth. A man digging in a mine of diamonds would perish of poverty if he could not trade with somebody. Trade reaches its highest productiveness when it is entirely unrestrained. Absolute freedom in the exchange of commodities is indisputably a primary consideration, but, as we owe money on which we have to pay interest, and as it costs a large sum to carry on the Government, and as direct taxation is to some extent monopolized by the States and municipalities, and is, moreover, distasteful to the people, and as we need a large revenue, it is by general consent determined that this revenue shall be raised by various taxes on the exchange of products. Now to raise a sum equal to our necessary expenses, including interest on the debt, by the levy of such taxes, seems easy enough. It is a more cumbrous and costly way of taxing than direct taxation would be ; but it answers its end and so far is serviceable. But it does not therefore follow that it would be wise to overburden ourselves with taxes, or to so badly arrange the necessary burden that it must encumber us and break us down. Every schoolboy knows that if he can pack his lesson book compactly and strap them tightly they are easily carried, whereas if he should tie them loosely to his heels, his finger ends and his jacket buttons, he would scarcely be able to walk, and could not run at all. He would be a pitiable and ridiculous object. But that is precisely what we have done. We can raise all the revenue we need by laying taxes on less than one hundred articles; but we are now paying taxes on some sixteen thousand! We could wrap up our burden capacity and bear it scarcely feeling it; we have suspended it from our finger ends and drag it at our heels. It has been ascertained by actual test that the tax on some twenty articles has produced some four-fifths of the annual revenue required, and it would be easy to produce the other fifth by means of very light duties on less than eighty other articles; thus, by taxing less than one hundred articles and interests all the revenue required might be obtained. It does not need any argument to show that this would be enormously better for the people than the present system, under which we are compelled to pay taxes on many thousands of different articles. This inexcusable interference with the business and industry of the people in thousands of different ways has no direct reference to revenue; its aim is mainly to advance special interests."

Some of the causes producing the unusual distress existing in the land, and the unhappy condition of the laboring class, have been noticed. It remains for our lawmakers to devise a remedy. We must recognize the fact that *necessity* is not the best incentive to industry, but that ambition, stimulated by prospective success, must produce that emulation among our workmen which alone assures a noble and superior manhood. To stimulate that ambition and generate that manly emulation, should be the object of legislation. Partisanship should have no voice in dictating enactments for the people. When an unselfish patriotism shall have obtained control of the halls of the legislature, antagonisms between capital and labor will cease, and every one will rejoice in that freedom which comes from just laws and equal rights to all, irrespective of class or condition. Herewith follow the reports referred to on page 816:

BRICK LAYER.

American nationality.

Earnings of father: 10 months, 10 hours per day, $450.

Condition.—Family numbers 7, parents and 5 children from 6 to 14 years of age; 5 go to school; we all go to church.

Food—breakfast, bread, butter, meat, coffee, &c. Dinner, bread, butter, vegetables, pie, &c. Supper, bread, butter, potatoes, cheese, &c.

Cost of living.—Rent, none; fuel, $25; groceries, $300; meat, $40; fish, 12; milk, $10; boots and shoes, $25; clothing, $40; dry goods, $30;

papers, $6 ; religion, $6 ; education, free school ; sundries, $10 ; total, $504.

Expenditures over receipts, or indebtedness for the year, $54.

Work in nail works ; runs half time ; times and business very dull ; no work outside of the mill.

LABORER.

American nationality.

Earnings of father: 9 months, 10 hours per day, $312 ; earnings of daughter, 12 months, 10 hours per day, $104 ; daughter, 12 months, 10 hours per day, $78 ; total, $494.

Condition—Family numbers 7, parents and 3 children, from 9 to 20 years of age ; one goes to school. Live in a small house with two rooms. Money on interest every year.

Food—Breakfast, bread, butter, coffee, &c. Dinner, bread, butter, meat and potatoes. Supper, bread, butter, meat and tea.

Cost of living.—Rent, none ; fuel, $19 50 ; groceries, $24 ; meat, $71 ; fish, $12 ; milk, $8 ; boots and shoes, $31 ; clothing, $51 ; dry goods, $24 ; papers, $1 50 ; religion, $2 50 ; education, $15 ; sundries, $93 ; total, $352 50 ; receipts over expenditures, $141 50.

MACHINIST.

American nationality.

Earnings of father : 12 months, 8 hours per day, 261 days, $522.

Condition.—Family numbers 4 parents and 2 children, from 4 to 1 year of age. Live in a tenement of 7 rooms in a tolerable locality with tolerable surroundings. The apartments are well furnished. Parlor and 4 chambers carpeted. Family dress well and attend church. No money in bank.

Food—breakfast, bread, butter, meat occasionally, potatoes and coffee. Dinner, bread butter, meat occasionally, vegetables, pie and coffee. Supper, bread, butter, cheese or meat occasionally, coffee.

Cost of living.—Rent, $100 ; fuel, $25 ; groceries, $105 ; meat, $50 ; fish, $8 ; milk, $12 ; boots and shoes, $20 ; clothing, $50 ; dry goods, $50 ; papers, $3 ; religion, $10 ; education, $3 ; sundries, $100. Total, $536.

Expenditures over receipts, or indebtedness for the year, $14.

BRAKEMAN.

Father's earnings: 12 months, 10 hours per day, 26 days, $480; wife's interest, $120—total, $600.

Condition.—Family numbers 3, parents and one boy, (going to school;) live in my own building, good brick and in good locality; rooms well furnished and family dresses well and comfortably; wife has an income from money at interest.

Food—breakfast, steak, fried potatoes, coffee, bread and butter. Dinner, roast beef or veal, potatoes, vegetables, pie, &c. Supper, bread and butter, cold meats, or sausage and pudding.

Cost of living.—Clothing and dry goods, $200; fuel, $25; groceries, $120; meat, $108; papers, $7; religion, $12; sundries, $50—total, $522.

Receipts over expenditures, $78.

CARPENTER.

American nationality.

Earnings of father, $420.

Condition.—Family numbers 7, parents and 5 children; 2 go to school; live in my own house, 7 rooms, house well furnished; attend church; have no money in bank, have all money in house and not all paid for.

Food—breakfast, bread, butter, meat, cold water. Dinner, bread and meat, vegetables generally. Supper, bread, butter, meat and cold water.

Work in nail works; do not keep an account of expenses, but will try by the next report.

ENGINEER.

American nationality.

Earnings of father: 12 months, at $130 per month, $1,560.

Condition.—Family numbers 4; parents and 2 children. Both go to school. Live in my own house in excellent locality. Family dresses comfortably. Rooms, six in number, all carpeted and well furnished. Save some money every year. Have had no sickness for three years in the family, and consequently no doctor bills. Family attend church regularly.

Food—breakfast, bread, butter, meat, potatoes, and coffee. Dinner, bread, butter, vegetables, meat and water. Supper, bread, butter, cold meat and coffee or tea

Cost of living —Fuel, $70; groceries, $450; meat, $120; fish, $20; milk, $30; boots and shoes, $30; clothing, $100; dry goods, $40; papers, $8; religion, $10; education, common school taxes, $5 80; sundries, 80. Total, $963 80.

Receipts over expenditures, $596 20.

FIREMAN.

American nationality.

Earnings of father: 12 months, 12 hours per day, $520.

Condition.—Family members 5, parents and 3 children from 2 to 6 years; one goes to school; live in a tenement of four rooms in a good locality with pleasant surroundings; family attend church; no savings in bank.

Food—breakfast, bread, butter, &c. Dinner, bread, butter, meat, potatoes, &c. Supper, bread, butter, cold meat, cakes and tea.

Cost of living.—Rent, $100; fuel, $10; groceries, $20 50; meat, $65; fish, $10; milk, $15; boots and shoes, $34; clothing, $60; dry goods, $12; papers, $2; religion, $12; education, $1; sundries, $74; total, $415 50.

Receipts over expenditures, $104 50.

CARPENTER.

American nationality.

Earnings of father: 12 months, 10 hours per day, 20 days, $449 60.

Condition.—Family numbers 5, parents and 3 children, from 9 to 15 years of age, all go to school; own my house, (7 rooms,) pay interest on some money on property; locality good, pleasant street; 5 rooms furnished good enough for our means; 4 rooms carpeted, dining room, front room and 2 chambers; children attend M. E. S. school, dress common, according to our means.

Food—breakfast, potatoes, bread, butter and coffee. Dinner, meat, potatoes, bread and coffee. Supper, bread, butter, coffee and occasionally meat.

Cost of living.—Rent, $70 75; fuel, $25; groceries, $95 50; meat, $75; fish, $4; milk, $3; boots and shoes, $26; clothing, $25; dry goods, $30; papers, $10; religion, $4; education, $11 50; sundries, $65—total, $444 75. Receipts over expenditures, $4 85.

Mr. Grier:—According to your circular, I have tried to comply with your request. The above report is as near correct as I can come at it. I receive my wages weekly and pay as I go, and keep no account of anything. When I have no money I buy nothing, unless I can't possibly avoid it. My income is certalnly too small to save anything for old age. Two years ago my wages were $2 50 for 10 hours; to-day I am receiving $1 75 for 10 hours. My prospects are not very encouraging at present. I think the law making 8 hours a day a disadvantage to the working class.

MACHINIST AND CARPENTER.

American nationality.

Earnings of father: 12 months, 10 hours per day, 313 days, salary $704 25.

Condition.—Family numbers 4, parents and 1 child 8 years old, and mother-in-law; 1 goes to school; live in private house, six rooms; good locality, with pleasant surroundings; the apartments well furnished; the parlor, sitting and dining rooms and three chambers carpeted; family dress well and attend church; have money in saving institution, and adding to it every month and year.

Food—breakfast, bread and butter, steak, coffee, &c., &c. Dinner, bread, butter, meat, potatoes, vegetables, cake and pie. Supper, bread, butter, cold meat, cake and tea.

Cost of living.—$469; fuel, $50; groceries, $150; meat, $75; milk, $6; boots and shoes, $30; clothing, $100; dry goods, $25; papers, $6; religion, $15; education, $12; sundries, $91 27; total, $560 25; receipts over expenditures, $144.

COAL MINER.

Irish nationality.

Earnings of father: 5 months, 10 hours per day, 105 days, $131 25; 1 son, aged 20, 5½ months, 10 hours per day, 125 days, $156 25; 2 sons, aged 19, 5 months, 10 hours per day, 105 days, $131 25. Total, $418 75.

Condition.—Work in the mines in 1875 was very dull; the earnings did not keep the family. Had to draw on the saving of former years. Family 8 in number, parents and 6 children, between 9 and 20. Three go to school. Live in good house, three rooms; apartments furnished, some of the rooms carpeted. Family dress comfortably; attend church. Savings very scant—can save no money.

Food—breakfast, bread, butter, tea, coffee, sometimes meat. Dinner, potatoes, meat, vegetables, bread and butter. Supper, potatoes sometimes, bread, butter, meat, coffee or tea.

Cost of living.—Rent, taxes freehold, $10; fuel, pay for hauling, $3; groceries, $120; meat, $100; fish, $10; milk, $40; boots and shoes, $80; clothing, $120; dry goods, $15; papers, $4; religion, $17; education, $4; sundries, flour, $90; soap, &c., $12. Total, $622.

Expenditures over receipts, or indebtedness for the year 1875, $203 25.

MINER.

Irish nationality.

Earnings of father: 7 months, average 10½ hours per day, 14 days, $75; July 14 days, June 10, May 11, the other months 9; son, aged 36, 7 months, 10 hours per day, 10 days, $100; son, aged 29, 7 months, 10 hours per day, 10 days, $175; total, $350.

Condition.—Family numbers 6 persons, 3 males and 2 females and infant two weeks old; live in our own house with four rooms and basement; own the house; two years formerly paid $10 50 per month in back street of town; rooms furnished comfortable; two rooms carpeted; family dress well for working people; attend church every Sunday; had money saved previous to '75 but has spent it all since up till date; but has now three shares in saving fund in town, each share valued at $22, but am afraid I will have to draw them out during the coming winter if the works do not start up this fall. All the family are total abstainers for the last four years; I used to get one daily paper and three weeklies and two monthlies, one of the monthly devoted to religion and the other to temperance; but I have had to stop them all but one weekly. Wages are too low and rent and provisions to dear for the poor to indulge in papers. Taxes this year on me are $21 50, and God only knows where I shall get the money to pay; the above is true.

Food—breakfast, bread, coffee and eggs. Dinner, bread, tea and eggs, sometimes beef, ——————. Supper, beef, potatoes, bread, vegetables.

Month of January it cost $54 90; February, $46 81; those two months I have kept account of; other months about the same. Taking fifty dollars as an average, the expenses are equal to the income, but we are in debt to the butcher $35.

CAR BUILDER.

Nationality, native.

Earnings of father: $35 per month, 10 hours per day, 5 days, $300.

Condition.—Family number 2, self and wife. Not keeping house, boarding. Cannot give cost of living.

Food—breakfast, bread, butter, meat or fish, potatoes, coffee. Dinner, bread, butter, meat, potatoes, cakes, pies, vegetables. Supper, bread, butter, meat, cheese, tea or coffee.

Cost of living.—Board per year, $180; boots and shoes, $15; clothing, $45; papers, $2; sundries, $5—total, $247.

Receipts over expenditures, $53.

LUMBER COUNTER.

American nationality.

Earnings of father: 10 months, 10 hours per day, 17 days; $514.

Condition.—Family numbers 7, two parents and five children, from 17 months to 8 years of age; two go to school; live in a tenement of six rooms, in a good locality, with pleasant surroundings; the apartments are well furnished; all the rooms are carpeted; family dress well and attend church; have no money in bank or anywhere else.

Food—breakfast, bread, butter, meat, potatoes and coffee; dinner, bread, butter, meat, potatoes, pie, cake and coffee; supper, bread, butter, cake and coffee.

Cost of living.—Rent, $132; fuel, $58; groceries, $384; meat, $38; milk, $14; boots and shoes, $26 50; clothing, $45; dry goods, $15; papers, $6; religion, $5; education, $4; sundries, $55; total, $782 50; expenditures over receipts, or indebtedness for the year, $268 50.

MACHINIST.

American nationality.

Earnings of father: 12 months, 10 hours per day, $775.

Condition.—Family numbers 3, parents and 1 child; live in tenement of 5 rooms in good location; the house is well furnished, carpeted all through; family dress well and attend church.

Food—breakfast, bread, butter, cold meat or eggs, potatoes and coffee. Dinner, bread, butter, meat, potatoes vegetables and pie. Supper, bread, butter, cold meat, cheese, fruit occasionally, cake and tea.

Cost of living.—Rent, $150; fuel, $23; groceries, $125; meat, $50; fish, $3; milk, $15; boots and shoes, $16; clothing, $65; dry goods, $25; papers, $10; religion, $15; sundries, $100—total, $597.

Receipts over expenditures, $178.

SADDLER AND HARNESS MAKER.

American nationality.

Earnings of father: 12 months, 10 hours per day, 24 days, $480.

Condition.—Family numbers 4, parents and two children, from two to four years of age; none go to school; live in a tenement of four rooms, in a good locality, with pleasant surroundings; the apartments are middling well furnished; one room carpeted; family dress well and attend church; no money saving, none in bank.

Food—breakfast, bread, butter, ham and coffee, sometimes beef steak. Dinner, bread, butter, ham, coffee, potatoes and beans. Supper, bread, butter, cold meat, rice and cakes, sometimes fish.

Cost of living.—Rent, $96 ; fuel, $24 ; groceries, $156 ; meat, $72 ; fish, $18 ; milk, $12 ; boots and shoes, $30 ; clothing, $75 ; dry goods, $75 ; papers, $4 ; religion, $6 ; education, $3 60 ; sundries, $40 ; total, $611 60 ; expenditures over receipts, or indebtedness for the year, $131 60.

MINER AND TRACK LAYER IN THE MINES.

Irish nationality.

Earnings of father : 12 months, 9 hours per day, 240 days, $480.

Condition.—Family numbering 4, parents and 2 small children, from one to five years old ; live in a tenement of four rooms, fair locality but no grounds. Apartments not well furnished, one room carpeted ; attend church ; dress common ; no money in bank. Owing to high prices for everything, takes all I make to keep us. Living is very high and rent also, they charge from five to fifteen dollars for houses per month, some of them miserable huts.

Food—breakfast, bread, butter, meat or fish, potatoes and coffee. Dinner, bread, butter, meat or fish, potatoes and coffee. Supper, bread, butter, meat or fish, tea and pie.

Cost of living.—Rent per year, $96 ; fuel, $12 ; groceries, $250 ; meat, $60 ; milk, $5 ; boots and shoes, $18 ; clothing, $20 ; dry goods, $10 ; papers, $6 ; religion, $12 ; sundries, $20—total, $509.

Expenditures over receipts, or indebtedness for the year, $29.

MINING FOREMAN.

Scotland nationality.

Earnings of father : yearly, $1,300 ; son, aged 17, earns on an average $30 per month, $360. Total, $1,660.

Condition.—Family numbers 11, parents and 9 children, from 1 to 22 years of age. Four go to school. Live in my own house of 11 rooms, 6 of them carpeted. Family dresses well and attend church. Have a little money, but have been going back last year. I keep no house account, and can't give precise figures as to how much I have gone back because I have been spending money on my house.

Food--breakfast, tea and coffee, bread, meat, potatoes, butter and cheese. Dinner, coffee, potatoes, beef or mutton, bread, butter and vegetables. Supper, tea, bread and butter and sauce and pie or cake.

Cost of living.—Own my own house, worth $3,000 ; would rent for about $350 per year ; fuel, about per year $24 ; groceries about $50 per month, $600 ; meat, about $15, $180 ; fish, about $10 ; milk, about $3 per month, $36 ; boots and shoes per year, $103 75 ; clothing, $280 ; dry goods, $100 ; papers, $8 ; religion, $40 ; education, school tax, $35 ; sundries, $100. Total, $1,516 75. Receipt over expenditures, $144 75.

The above is as near as I can come to the earnings that have come into the house, and the outlay for cost of living as near as we can figure from memory.

PUDDLER.

American nationality.

Earnings of father : 6 months, 12 hours per day, $375.

Condition.—Family numbers 5, parents and three children, from 5 to 14 years of age ; two go to school ; live in a tenement of six rooms, in a good locality.

Food—breakfast, bread, butter, meat and coffee. Dinner, bread, butter, vegetables, pie and coffee. Supper, bread, butter, potatoes, sometimes cake, tea.

Cost of living.—Rent, $84 ; fuel, $20 ; groceries, $290 ; meat, $10 ; fish, $1 ; milk, 5 ; boots and shoes, $12 ; clothing, $20 ; dry goods, 10 ; papers, $2 ; education, (free school ;) sundries, $20—total, $474.

Expenditure over receipts, or indebtedness for the year, $95.

Work in nail works ; runs half the time ; business very dull ; no work outside of the mill.

PUDDLER.

American nationality.

Earnings of father : 11 months, 12 hours per day, $550.

The works which we are identified with, the nail works, do not average half time, consequently men employed here must live as economically as they possibly can.

Food—Breakfast, bread, butter, meat, potatoes, coffee, &c. Dinner, bread, butter, vegetables, cake, pie, &c. Supper, bread, butter, potatoes, cheese, meat and tea.

Cost of living.—Rent, none ; fuel, $35 ; groceries, $350 ; meat, $40 ; fish, $12 ; milk, $15 ; boots and shoes, $28 ; clothing, $60 ; dry goods, $35 ; papers, $5 ; religion, $10 ; education, free school ; sundries, $35. Total, $626.

Expenditures over receipts, or indebtedness for the year, $76.

CARPENTER,

And farming sometimes.

American nationality.

Earnings of father: 10 hours per day, 136 days; $252 32; receipts of farm, $152 10; total, $404 42.

Condition.—Family numbers 3, parents and one child, 15 years old; goes to school in winter; live in house of 5 rooms, in pleasant neighborhood; the apartments plain and comfortably furnished; 3 rooms carpeted; family dress well, *not extravagant*, and attend church; have some money saved and add to it every year. My business is so it is hard for me to make out a report such as you want, as I understand you want reports from them who follow one trade all the time. I work at home part of my time on my farm, to make out my report I have to include income from farm. It is the best I can do, if it is not such as you want throw it into the waste basket.

Food—breakfast, bread, butter, meat or fish, coffee, jelly or preserves. Dinner, bread, butter, meat, potatoes, vegetables, pie, &c. Supper, bread, butter, meat, sauce, jelly, preserves, tea or coffee.

Cost of living.—Taxes, $14 69; groceries, $90 22; meat, $53 10; fish, $5; boots and shoes, $25; clothing, $47; dry goods, $15; papers, $7; religion, $12 50; education, school taxes, $7 50; sundries, $25 41; total, $302 42; receipts over expenditures, $102.

NAIL PLATE HEATER.

American born.

Earnings of father: 12 months, $600.

Condition.—Family members 5, parents and 3 children; 2 go to school; live in my own house; 8 rooms; house well furnished; family dress as well as all mechanics; attend church; have no money in bank; have all money in house, and not all paid for.

Food—breakfast, bread, butter, meat or fish, potatoes, coffee. Dinner, bread, butter, meat and vegetables generally. Supper, bread, butter, tea or coffee.

Cost of living.—Holding my own; cannot enumerate this year.

Have been running about half-time for the last year, therefore could not save any money, but thankful that I can hold out and make ends meet Do not keep account of grocery and living in general, but will try and [illegible] do so by another report. Make $3 per day now when I work, or 50 cents per ton; make six tons per day.

MINER.

Welsh nationality.

Earnings of father: 6 months, 10 hours per day, 144 days; $345 60; son, aged 15: 6 months, 10 hours per day, 144 days; $172 80; total, $518 40.

Condition.—Family contains 9; parents 2 and 7 children, aged from 2 to 17 years; four of them attend school; we live in a tenement house of five rooms, with kitchen attached, in a pleasant locality; house being detached from any other buildings makes it quite comfortable, also well aired; family dresses common; attend church; no money in bank now but had three years ago, quite a sum, but since then been drawing out every year.

Food—breakfast, bread, butter and cheese with coffee Dinner, about the same, being in the mines, therefore no cooking. Supper, meat and potatoes, with bread, and sometimes cake or pie.

Cost of living.—Rent, $36; fuel, $27; groceries, $264; meat, $40; fish, $8; boots and shoes, $60; clothing, $45; dry goods, $75; papers, $3; religion, $6; education, $6; sundries, doctor $1 25 per month, &c., $25; total, $554; expenditures over receipts, or indebtedness for the year, $35 60.

W. Hayes Grier, Esq:

DEAR SIR:—The above is a true and correct report, to the best of my knowledge, for the year ending December 31, 1875, but I am compelled to say that many, and the majority in this place have not done as well as I did for the same term.

RAILROAD—LABOR REPORT.

ALLEGHENY VALLEY RAILROAD CO.

	Men	Pay per day	Women	Pay per month	Average hours worked per day	Av'ge pay of men per month	Av'ge time worked in the year
President	1	$19 25			8 h'rs	$500 00	310
Vice President	1	16 05			"	416 67	"
Chief Engineer	1	6 40			"	166 66	"
General Ticket Agent	1	4 80			"	125 00	"
General Superintendent	1	8 05			"	208 33	"
General Purchasing Agent	1	6 40			"	166 66	"
Secretary of Board of Directors	1	1 95			"	50 00	"
Directors	10				"		"
Treasurer	1	9 60			"	250 00	"
Pay Master	1	5 75			"	150 00	"
Division Superintendents	2	10 20			"	266 66	"
Local Engineers	3	5 45			"	142 22	"
Master Mechanic of Shops	1	6 40			"	166 66	"
General Foremen of Shops	11	3 35			"	87 58	"
Traveling Engineer	1	3 85			"	100 00	"
Chief Clerk of Motive Power	1	3 20			"	83 33	"
Road Supervisors	5	3 45			"	90 00	"
Chief Clerk Maintenance Way	1	3 45			"	90 00	"
Clerks	88	2 15			"	56 30	"
Chief Telegraph Operator	1	4 80			"	125 00	"
Telegraph Operators	41	1 80			"	46 96	"
Ticket Agents	55	1 70			"	44 00	"
Depot Masters	2	2 05			"	52 67	"
Train Dispatchers	11	3 20			"	82 95	"
Locomotive Drivers	80	2 55			"	66 31	"
Conductors (Passenger,)	11	3 15			"	81 28	"
Conductors (Freight,)	61	1 95			"	50 54	"
Brakemen	196	1 30			"	33 93	"
Firemen	87	1 30			"	33 60	"
Watchmen	79	1 35			"	35 18	"
Track Foremen	85	1 85			"	47 81	"
Trackmen	784	1 06			"	27 60	"
Baggage Masters	16	1 50			"	38 28	"
Bridge Builders	54	1 40			"	36 75	"
Carpenters	104	1 60			"	42 00	"
Blacksmiths	34	2 10			"	53 80	"
Machinists	65	1 90			"	49 30	"
Boiler Makers	17	1 70			"	44 60	"
Tinners	3	1 75			"	45 16	"
Coppersmiths	3	2 20			"	56 75	"
Common Laborers	151	1 45			"	37 22	"
Switch Tender	1	1 55			"	40 00	"
Painters	3	1 60			"	41 37	"
Car Cleaners			4	$1 05	"	27 25	"

Characteristics of Road.—The River Division of the Allegheny Valley railroad follows the Allegheny river for a distance of 132 miles, from Pittsburgh to Oil City, having an average gradient of 2 feet per mile and easy curvature. Twelve miles of this division is double track. The Low Grade Division commences at Red Bank, on the River Division, 64 miles from Pittsburgh, and extends in a north-easterly direction for a distance of 110 miles to Driftwood, on the West Branch of the Susquehanna, connecting at that point with the Philadelphia and Erie railroad. The Low Grade Division is built in the valleys of Red Bank and Sandy Lick, on the western slope of the Allegheny mountain range, and of the Bennett's branch of the Susquehanna, on the eastern slope of the mountain, cutting through the summit of the dividing ridge by a tunnel 1,900 feet long. The most favorable grade of any east and west road in Pennsylvania has been obtained by following this route, it being in the direction of the trade (eastward) only 16 feet per mile. The Sligo Branch, 10 miles in length, extends from Lawsonham (or Sligo Junction,) on the Low Grade Division, to the town of Sligo, in Clarion county. The Plum Creek Branch, 7 miles in length, extends from Verona, on the River Division, to surrounding coal fields.

The line is ballasted with stone throughout, and is thus free from dust. A large part of the track is laid with steel rails, which is being used almost altogether for renewals as iron rails are worn out. All passenger trains are equipped with the Westinghouse air brake and the Miller platform.

A. T. ROWAND, *Auditor.*

February 25, 1876.

ATLANTIC AND GREAT WESTERN RAILROAD.

	Men	Pay per day	Boys	Av'ge pay per day,	Average women	Av'ge pay per day	Av'ge hours worked per day	Av'ge pay of men per month	Av'ge pay of women per month	Average pay of boys per month
General Master Mechanic,	2	$8 65	......	......	......	......	9	$225 00	......	......
General Purchas'g Agent,	1	8 01¼	......	......	......	......	8	208 33	......	......
Directors' Auditor	1	14 42⅓	......	......	......	......	8	375 00	......	......
Treasurer	1	10 09⅔	......	......	......	......	8	262 50	......	......
Paymaster	1	7 21⅛	......	......	......	......	8	187 50	......	......
Division Superintendents,	2	7 21⅛	......	......	......	......	8	187 50	......	......
Local Engineers	2	1 90	......	......	......	......	9	49 50	......	......
Mast'r Mechanics of shops,	1	5 20	......	......	......	......	9	135 00	......	......
Gen'l Foremen of shops	13	3 29	......	......	......	......	9	85 50	......	......
Road Foremen	4	3 67	......	......	......	......	10	95 42	......	......
Clerks	54	2 77	......	......	......	......	8,9,10	72 02	......	......
Telegraph Operators	22	1 83	......	......	......	......	10	47 58	......	......
Ticket & Freight Agents	33	2 08	......	......	......	......	10	54 08	......	......
Depot Masters	3	1 18	......	......	......	......	10	30 68	......	......
Train Dispatchers	6	4 09	......	......	......	......	8	106 34	......	......
Locomotive Drivers	84	3 79	......	......	......	......	9	98 54	......	......
Conductors, (passenger,)	13	3 70	......	......	......	......	8	96 20	......	......
Conductors, (freight,)	55	2 52	......	......	......	......	10	65 52	......	......
Brakemen	180	1 82	......	......	......	......	8, 10	47 32	......	......
Firemen	84	1 90	......	......	......	......	9	49 40	......	......
Watchmen	14	1 39	......	......	......	......	12	36 14	......	......
Track Foremen	30	1 80	......	......	......	......	10	46 80	......	......
Trackmen	185	1 28	......	......	......	......	10	33 28	......	......
Baggage Masters.,	4	1 59	......	......	......	......	10	41 34	......	......
Bridge Builders	6	2 90	......	......	......	......	10	75 40	......	......
Carpenters	16	2 55	......	......	......	......	9	66 30	......	......
Car Builders	45	1 95	......	......	......	......	9	50 70	......	......
Blacksmiths	50	1 96	......	......	......	......	9	50 96	......	......
Machinists	84	2 09	3	$0 93	......	......	9	54 34	$24 18	......
Boiler Makers	30	1 92	2	80	......	......	9	49 92	20 80	......
Tinners	3	2 07	......	......	......	......	9	53 82	......	......
Coppersmiths	2	2 35	......	......	......	......	9	61 10	......	......
Common laborers	107	1 41	3	83	1	$1 04	9, 10	36 66	21 58	$27 04
Switch Tenders	29	2 10	......	......	......	......	12	54 60	......	......
Painters	8	2 36	......	......	......	......	9	61 36	......	......

Average time worked in the year: Cannot be furnished.

Characteristics of Road.—Length of main line, from Salamanca, New York, to Dayton, Ohio, 387.50 miles; length of main line of road laid, 387.50 miles; length of main line of road in Pennsylvania, 92.42 miles; length of sidings, main line, 86.20 miles; gauge of road, 6 feet, 4 feet 9¼ inches and 4 feet 9⅜ inches; weight of rail per yard on main track, 56 to 6 pounds; branches owned: Meadville to Oil City, Pennsylvania, 33.78 miles; Silver Creek Branch in Ohio, 1.55 miles.

NOTE.—This statement only includes employees residing in the State of Pennsylvania.

September 5, 1876.

THOS. WARNOCK, *Auditor.*

BELL'S GAP RAILROAD COMPANY.

President, A. L. Massey, No. 11 Merchant's Exchange, Philadelphia; Superintendent, Jos. Ramsey, Jr., Antestown P. O., Blair county, Pa.

	Men	Pay per day	Av. hours worked per day	Pay of men per month	Av. time worked in the year
President	1				
General Superintendent	1				
Secretary of Board of Directors	1				
Directors	5				
Treasurer	1				
General Foremen of Shops	1	$2 10	10		300
Clerk*	1		10		
Ticket Agents	2			$10 00	
Locomotive Drivers	2	3 00	10	3 00	250
Conductors, (Passengers,) Conductors, (Freight,)	2	2 25	10		250
Brakemen	2	1 75	10		250
Firemen	2	1 75	10		250
Track Foremen	2		10	40 00	300
Trackmen	8	1 25	10		300
Car Builders	2	2 00	10		300
Blacksmiths	2	$1 50 to 2 25	10		300
Car Inspector	1		10	50 00	

* Cannot give salary as his salary is also charged to coal amount.

Characteristics of Road.—Gauge, (narrow,) 3 feet; weight of rails, 35 lbs per yard; Cambria Iron Company manufacture; cross ties 5 ft. 6 in. long, 7 in. face, 5 in. thick; all cross ties that we now put in are 6 ft. long by 6 in. thick; white and rock oak; 2,816 per mile; ballast, stone, slate, and stone and sandy earth mixed; grade, maximum 158.4 feet per mile, for 6.3 miles; curvature, maximum 28° curves, radius 206 feet; engines, weight 31,000 lbs., 6 wheel connected with leading wheels.

June 6th, 1876.

JOS. RAMSEY, Jr., *Sup't.*

CATASAUQUA AND FOGELSVILLE RAILROAD COMPANY.

Catasauqua, Pa.

	Men	Pay per day	Av. hours worked per day	Pay of men per month	Av. time worked in the year—hours.
President	1	......	9	$40 00	2,817
General Ticket Agent and Treasurer	1	......	9	26 66⅔	2,817
General Superintendent and Engineer	1	......	9	166 66⅔	2,817
General Freight Agent	1	......	9	80 00	2,817
General Foreman of Shops	1	......	11	65 00	3,443
Road Foreman	1	......	11	52 00	3,443
Clerk	1	......	9	45 00	2,817
Ticket Agent and Freight	1	......	11	45 00	3,443
Do	1	......	11	52 00	3,443
Do	1	......	9	20 00	2,817
Locomotive Drivers	2	$2 25	11	58 50	3,443
Conductor, Passenger and Freight	1	......	11	58 50	3,443
Conductor on Freight	1	1 63	11	42 38	3,443
Brakemen	5	1 58	11	....	3,443
Firemen	2	1 80	11	....	3,443
Track Foremen	10	1 25	11	....	3,443
Trackmen	19	1 10	11	....	......
Carpenter	1	1 67	11	....	3,443
Machinist	1	1 35	11	....	3,443
Common Laborers	2	1 10	11	....	......

Characteristics of Road.—Catasauqua to Rittenhouse Gap, 20 miles; Trexlertown to Lichty, 5 miles; connects at Alburtis with East Pennsylvania railroad; connects at Catasauqua with Lehigh Valley and Lehigh and Susquehanna Division, C. R. R. Co. of New Jersey; gauge, 4 ft. 8½ inches.

June 29, 1876.

R. E. WILLIAMS,
for C. W. CHAPMAN, *Sup't.*

CORNWALL RAILROAD CO., LEBANON, PA.

	Men	Pay per day	Average hours worked per day	Pay of men per month	Av'ge time worked in the year
President	1				Whole year.
General Superintendent	1			$91 67	"
Secretary of Board of Directors	1				"
Directors	5				"
Treasurer	1				"
Clerk	1			50 00	"
Locomotive Driver	1			91 67	"
Conductor (Freight,)	1	$1 67		50 00	"
Brakemen	2	2 00 1 75			" "
Fireman	1	1 83			"
Watchman	1	1 40	11		"
Track Foreman	1	2 00			"
Trackmen	5	1 40			"
Carpenters	2	2 00 1 25			" "
Blacksmiths	2	1 80 1 90			" "

Characteristics of Road.—Cost of road and equipment, $423,643 23; length of main line in miles, $7\frac{47}{100}$; length of main line in Pennsylvania, entire; sidings, $2\frac{3968}{5280}$ miles; gauge of road, 4 feet $8\frac{1}{2}$ inches; weight of rail per yard on main track, 64 and 68 pounds; length of miles of branch roads owned, $1\frac{3966}{5280}$ miles; number of engine houses and shops, 2; number of engines, 3; do not carry passengers, have no passenger cars; number of freight cars, all kinds, 157; number of wooden, stone, iron and brick bridges, 14; number of culverts, 18; number of railroads crossed, 1; number of stations, freight, 12; number of wood and water stations, 2; value of real estate held by the company exclusive of roadway, $600; track laid in broken limestone and furnace cinders; length of miles laid with steel rails, 4,907 feet.

June 8, 1876.

D. S. HAMMOND, *Treasurer.*

DELAWARE AND HUDSON CANAL COMPANY.

General office, New York City. R. Manville, Superintendent, Railroad Department, Carbondale, Pa.

	Men	Av. pay per day	Boys	Av. pay per day	Av. hours worked per day	Av. pay of men per month when working full	Av. pay of boys per month when working full	Av. time worked in the year—days
President	1	....	....	....	....	....	....	....
General Manager	1	....	....	....	....	....	....	....
Superintendent	1	....	....	....	....	....	....	....
Local Passenger and Freight Ag't,	1	....	....	....	....	....	....	....
Division Assistant Sup'ts	2	....	....	....	....	....	....	....
Master Carpenter & Bridge Builder,	1	....	....	....	....	....	....	....
Pay Master	1	....	....	....	....	....	....	....
Local Engineer	1	....	....	....	....	....	....	....
Master Mechanic of Shop	1	....	....	....	....	....	....	....
Track Master	1	....	....	....	....	....	....	....
Clerks	12	$1 67	....	....	10	$43 42	....	312
Train Dispatchers	2	3 36	....	....	10	87 36	....	312
Telegraph Operators	8	1 30	....	....	14	33 80	....	312
Agents, Freight and Passenger	16	1 84	....	....	10	47 84	....	312
Yard Masters	6	2 19	....	....	10	56 94	....	312
Foremen Engine House, &c	5	2 48	....	....	10	64 48	....	312
Engine Wipers	22	1 24½	....	....	10	37 35	....	350
Locomotive Drivers	29	3 18	....	....	12	82 68	....	312
Conductors, (Passenger,)	2	2 89	....	....	12	75 14	....	312
Conductors, (Freight,)	22	2 34	....	....	12	60 84	....	312
Brakemen	67	1 73	....	....	12	44 90	....	300
Firemen	32	1 85	....	....	12	48 10	....	312
Watchmen	4	1 31	....	....	12	39 30	....	365
Track Foremen	25	2 22	....	....	10	57 72	....	312
Trackmen	225	1 27	....	....	10	33 02	....	240
Baggage Masters	5	1 60	....	....	12	41 60	....	312
Foreman Carpenter	1	2 75	....	....	10	71 50	....	312
Carpenters	23	2 08	....	....	10	54 08	....	290
Car Builders and Repairers	15	1 59	....	....	10	41 34	....	270
Blacksmiths	2	2 60	....	....	10	67 60	....	270
Machinists	13	2 28	....	....	10	59 28	....	270
Apprentice	....	....	1	$0 75	10	....	$19 50	270
Boiler Makers	2	2 60	....	....	10	67 60	....	270
Foremen Machine Shops	2	2 87½	....	....	10	74 75	....	312
Foremen Car Shops	2	2 50	....	....	10	65 00	....	300
Common Laborers	45	1 42	....	....	10	36 92	....	270
Switch Tenders and Flagmen on Crossings	14	1 49	....	....	10	38 74	....	312
Painters	6	2 26	....	....	10	58 76	....	300
Tool and Water Boys on Track	....	....	15	84	10	....	21 84	180

Characteristics of Road.—The Delaware and Hudson canal company railroad extending from Nineveh, New York, to Plymouth, Pa, a distance of 100 miles is made up of Railroad as follows: Nineveh Branch, Nineveh Junction to Jefferson Junction, 22 miles; Jefferson Branch, Erie railway over which the Delaware and Hudson canal company have trackage contract, Jefferson Junction to Carbondale, 36 miles; Carbondale to Plymouth, 42 miles; total main lines, 100 miles.

June 23, 1876.

R. MANVILLE, *Sup't.*

THE DELAWARE AND HUDSON CANAL COMPANY'S GRAVITY RAILROAD.

General office, New York City. R Manville, Superintendent, Railroad Department, Carbondale, Pa.

	Men	Average pay per day	Boys	Av. pay per day	Av. hours worked per day	Av. pay of men per month when working full	Av. pay of boys per month when working full	Av. days worked in a year
Div. Assis't Sup't	1							
Track Master	1							
Master Mechanic	1							
Assis't Master Mechanic	1							
Div. Sup'ts Machinery	2							
Foreman Blacksmith Shop	1							
Master Car Builder	1							
Sup't Saw Mills	1							
Shipping Ag't, Honesdale	1							
Foremen Track	11	$2 45			10	$63 70		312
Assistant Foremen Track	5	1 64			10	42 64		312
Trackmen	82	1 24			10	32 24		240
Tool and Water Boys on Track,			10	$0 86	10		$22 36	180
Foremen Machine Shop	1	3 00			10	78 00		300
Machinists	15	2 05			10	53 30		270
Machinist's Apprentice	1	1 25			10	32 50		270
Pattern Makers	3	2 07			10	53 82		290
Bolt Cutters	5	1 44			10	37 44		280
Blacksmiths	18	2 26			10	58 76		270
Blacksmith's Helpers	18	1 55			10	40 30		270
Foreman Masons	1	3 08			10	80 08		312
Foreman Quarry	1	2 25			10	66 30		312
Masons	7	2 37			10	61 62		300
Foremen Carpenters	2	2 47½			10	64 35		300
Carpenters	18	2 07			10	53 82		270
Pulley Tinkers & Rope Riggers,	11	2 01			12	52 26		300
Foremen Car Shops	4	2 27½			10	59 15		300
Car Builders	10	1 97			10	51 22		270
Car Repairers	41	1 50			10	39 00		270
Watchmen	25	1 40			12	43 40		365
Telegraph Operator	1	0 96			12	24 96		312
Freight and Office Clerks	5	1 82			10	47 32		312
Conductors Coal Trains	34	2 24			12	58 24		300
Brakemen	90	1 78			12	46 28		300
Road Foremen	23	2 26			12	58 76		300
Headmen & Footmen Planes	84	1 67½			12	43 55		300
Switchmen	17	1 37			12	35 62		300
Drivers	19	1 69			12	43 94		300
Engineers	32	2 51			12	65 26		312
Assis't Engineers and Firemen,	45	1 78			12	46 28		300
Foremen Dock Screens, &c	9	2 26			11½	58 76		312
Engineers & Cranesmen Steam Shovels	4	2 77½			11½	72 15		312
Brakemen Pockets, Dock, &c.,	30	1 38			11½	35 88		240
Shovelers, Dumpers, &c	138	1 38			11½	35 88		240
Weigh Masters	2	1 70			11½	44 20		312
Slate Pickers			40	0 45	11½		11 70	170
Canvass Boys, &c			25	0 76	11½		19 76	170
Shop and Water Boys			9	0 72	11		18 72	200
Pulley Oilers	1	1 70	5	0 93	12	44 20	24 18	300
Common Laborers	56	1 50			10	39 00		270

Remarks.—The Delaware and Hudson Canal Company's Gravity Railroad consists of a loaded car track from Olyphant to Honesdale, a distance of $26\frac{1}{2}$ miles, and a light car track from Honesdale to Olyphant, a distance of 30 miles making a total of $56\frac{1}{2}$ miles.

June 23, 1876.

R. MANVILLE, *Sup't.*

EAST BROAD TOP RAILROAD AND COAL CO., ORBISONIA, PA.

	Men	Pay per day	Average hours worked per day	Pay of men per month
President	1			$1 25
Vice President	1			
Chief Engineer and Superintendent	1			208 33
Secretary of Board of Directors	1			
Directors	6			
Treasurer and Secretary	1			83 33
Pay Master and Accountant	1			100 00
General Foreman of Shops	1	$3 00		
Road Foreman	1			55 00
Clerks	4	1 50		1 at 16 33 2 at 25 00
Ticket Agents, Depot Masters	8			21 62
Locomotive Drivers	6	3 00 2 25	11	
Conductors (Passenger,)	1		10	60 00
Conductor (Freight,)	3		10	60 00 55 00
Brakemen	8	1 25	10	
Firemen	6	1 50	10	
Watchmen	3	1 20	12	
Track Foremen	7		$9\frac{2}{3}$	40 00
Trackmen	23	1 00	$9\frac{2}{3}$	
Baggage Masters	1	1 50	10	
Carpenters	3	2 00 1 50	$9\frac{2}{3}$	
Car Inspectors	2	1 25	$9\frac{2}{3}$	
Blacksmiths	2	1 75 1 25	10	
Common Laborers	8	1 00	$9\frac{2}{3}$	
Painter	1	2 00	10	

Telegraph Operators act as agents for tickets and freight.

Characteristics of Road.—Length of main line from Mt. Union to Robertsdale, 30 miles; length of main line laid, 30 miles; length sidings, $5\frac{31}{100}$ miles; gauge of road, 3 feet; weight of rail, 40, 45, 50 lbs; track laid on oak ties and broken stone ballast.

3d June, 1876

A. W. SIMS, *Supt.*

EDGEWOOD RAILROAD COMPANY, PITTSBURG, PA.

President, 1; pay per day, none; General Superintendent, 1, at $1 63 per day; average time worked in the year, 5 months and 5 days; Secretary of board of directors, 1; pay per day, none; locomotive drivers, 1, at $2 25 per day; average hours worked per day, 10; average time worked in the year, $101\frac{1}{4}$ days; brakemen, 1, at $2 per day; average hours worked per day, 10; average time worked in the year, 17 days; common laborers: Do not employ a regular gang of laborers. There were 124 days' labor performed during 8 months, from May to December 31, 1875, at an average cost of $1 43 per day.

Characteristics of Road.—Length of main line of road, from Edgewood intersection to Hampton coal fields, 1 mile; gauge of road, 4 feet 9 inches. weight of rail per yard, 56 pounds.

This road has been stopped by the court, and was only in operation a portion of the year.

June 28, 1876.

ED. P. LOY, *Secretary.*

HANOVER JUNCTION, HANOVER AND GETTYSBURG RAILROAD.

Post office address, Hanover, Pa.

	Men	Pay per day	Av. hours worked per day	Pay of men per month
President				$100 00
General Manager*				
General Ticket Agent				83 33
General Superintendent				62 50
Secretary of Board of Directors				4 $16\frac{2}{3}$
Directors	10			2 00
Treasurer				16 $66\frac{2}{3}$
Master Mechanic at Shops	1	$2 75	10	
Clerks	2			50 00 each.
Chief Telegraph Operators†	4			
Ticket Agents	11			‡20 00
Locomotive Drivers	4			60 00 each.
Conductors, (Passenger)	2			62 50 "
Conductors, (Freight)	2			60 00 "
Brakemen	5			38 00 "
Firemen	3			38 00 "
Track Foremen	4		10	50 00 "
Trackmen	20		10	1 00 "
Baggage Master	1			40 00 "
Carpenters	5		10	40 00 "
Blacksmiths	2	1 70	10	
Machinists	4	1 50	10	
Painter	1	1 90	10	

*The President. †Paid by the Western Union Telegraph Company. ‡Average.

Characteristics of Road.—The Hanover Junction, Hanover and Gettysburg Railroad extends from Hanover Junction, a point on the Northern Central Railway to Gettysburg, a distance of thirty miles. The ballasting of the roadbed with stone is almost entirely completed. This road passes through a fine farming country, and there are also numerous iron ore banks and limestone quarries close by. At a point about six miles from Hanover Junction the road connects with the Bachman Valley Railroad, and at Hanover it connects with the Frederick Division of the Pennsylvania Railroad.

HANOVER *June* 13, 1876.

R. YOUNG, *Auditor.*

HARRISBURG AND POTOMAC RAILROAD.

Office, Boiling Springs, Pa.

	Men	Pay per day	Pay of men per month	Av. time worked in the year
President	1	$4 00	$100 00	Full time.
Chief Engineer	1	3 00		"
General Superintendent	1		35 00	"
Secretary of Board of Directors	1			
Directors	9			
Treasurer	1		35 00	Full time.
Locomotive Drivers	1	2 50		"
Conductors, (Passenger and Freight,)	1	1 80		"
Brakemen	1	1 10		"
Firemen	1	1 60		"
Watchmen	1		20 00	"
Track Foremen	1	1 25		11 months.
Trackmen	4	1 00		"

Characteristics of Road.—This is a newly built road, main line running from White Hill, on the Cumberland Valley railroad, to Cleversburg, Pa., all within the limits of Cumberland county, and portions of York; whole length of main line, about 39 miles. Amount now completed and in operation, about 18 miles, including branches. A branch to York Springs borough, in Adams county, leaving the main line near Dogwood Run, has been graded, in all about nine miles. A branch of two miles leaving the main line at Boiling Springs, reaches the ore mines worked by the Philadelphia and Reading coal and iron company.

The road is well built, grades not exceeding fifty feet per mile. Rails of 56 pounds. Good ties and stone ballast.

June 7, 1876.

ASBURY DERLAND, *Superintendent.*

JAMESTOWN AND FRANKLIN R. R.

Lake Shore and Michigan Southern railway company, lessee, Cleveland, Ohio.

	Men	Pay per day	Average hours worked per day..	Pay of men per month...........
Division Superintendent	1	$6 66	10	$200 00
General Foreman of Shops	1	3 46	8	90 00
Road Foremen	17	1 81	8	47 00
Clerks	5	1 92	8	50 00
Telegraph Operators	7	2 00	10	52 00
Station Agents	8	2 61	10	68 00
Yard Masters	1	4 16	10	125 00
Train Dispatchers	3	2 83	10	85 00
Locomotive Drivers	4	3 50	10	91 00
Conductors (Passengers,)	2	3 46	10	90 00
Yard Conductor	1	2 69	10	70 00
Brakemen	9	1 65	10	43 00
Firemen	5	1 75	10	45 50
Watchmen	6	1 46	10	38 00
Trackmen	70	1 25	10	32 50
Baggage Masters	4	1 77	10	46 00
Flagmen	2	1 38	10	36 00
Blacksmith	1	2 60	8	67 50
Machinists	2	2 60	8	67 50
Common Laborers	26	1 25	10	32 50
Switch Tenders	2	1 34	10	35 00
Engine Wipers	10	1 35	8	35 00

CLEVELAND, *June* 28, 1876.

C. P. LELAND, *Auditor.*

LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY.

Cleveland, Ohio.

	Men	Pay per day	Av. hours worked per day	Pay of men per month	Av. time worked in the year-months.
Directors	3	......	......	......	......
General Foremen of Shops	3	$3 84	10	$100 00	12
Road Foremen	14	1 88	8	49 00	12
Clerks	25	1 92	8	50 00	12
Telegraph Operators	11	1 88	10	49 00	12
Ticket Agents	3	1 94	10	58 00	12
Depot Masters	2	2 54	10	66 00	12
Station Agents	8	2 30	10	69 00	12
Yard Masters	7	3 07	10	80 00	12
Locomotive Drivers	24	3 70	10	96 00	12
Conductors, (Passenger,)	4	4 23	10	110 00	12
Conductors, (Freight,)	1	2 88	10	75 00	12
Conductors, (Yard,)	7	2 23	10	58 00	12
Brakemen	40	1 92	10	50 00	12
Firemen	23	1 73	10	45 00	12
Watchmen	12	1 42	10	37 00	12
Switchmen	25	1 30	10	34 00	12
Trackmen	83	1 25	10	32 50	12
Baggage Masters	4	1 34	10	35 00	12
Blacksmiths	3	2 50	8	65 00	12
Machinists	2	2 00	8	52 00	12
Common Laborers	117	1 25	10	32 50	9
Flagmen	8	1 34	10	35 00	12
Targetmen	2	1 50	10	39 00	12

June 28, 1876.

C. P. LELAND, *Auditor*.

LAWRENCEVILLE AND EVERGREEN RAILROAD COMPANY.

86 Wood street, Pittsburg.

	Men	Pay per day	Av. hours worked per day	Pay of men per month	Av. time worked in the year-days.
President	1	......	......	......	......
Directors	6	......	......	......	......
Treasurer	1	......	......	......	......
Locomotive Driver	1	$1 50	13	$45	334
Conductor, (Passenger,)	1	1 16	13	35	334
Watchman	1	66⅔	12	20	365
Trackmen	2	1 25	10	32½	240

Characteristics of Road.—The Lawrenceville and Evergreen railroad, narrow gauge, 3 feet; length of road, $2\frac{61}{100}$ miles; does exclusively a local passenger traffic and is operated with one locomotive and two passenger cars, running from Evergreen to Bennet Station, at which point it connects with trains on the West Pennsylvania railroad; weight of rail, 28 and 30 pounds; weight of locomotive, 18,000 pounds; track laid with oak cross-ties.

June 17, 1876.

A. C. M'CALLAM,
Secretary and Treasurer.

LITTLE SAW MILL RUN RAILROAD COMPANY.

Pittsburg, South Side, Pa.

	Men.	Pay per day.	Av. hours worked per day.	Pay of men per month.	Av. time worked in the year.
President	1			$100 00	12 months.
General Manager and Superintendent: President acting as such.					
Gen'l Purchasing Agent: Clerk acting as such.					
Secretary of Board of Directors	1	$2 50			13 days.
Directors	6	2 50			10 days each.
Treasurer	1				12 days.
Paymaster: President.					
Gen'l Foreman of shops: Machinist.					
Clerks	1			66 66	12 months.
Locomotive Drivers	2	2 75	10		163 days each.
Conductor, (Passenger,)	1	2 00	10		248 days.
Brakemen	2	1 75	10		122 days each.
Firemen	2	2 10	10		163 days each.
Watchman	1	1 75	10		231 days.
Track Foreman	1	1 85	10		260 days.
Trackmen	2	1 65	10		244 days each.
Carpenters	3	1 at 75 2 2 at 00 2	10		142 days. 184 days.
Blacksmiths	2	1 at 2 25 1 at 1 50	10		190 days. 214 days.
Machinists	2	1 at 3 00 1 at 2 25	10		204 days. 100 days.
Common Laborers	10	1 60	10		107 days.
Coal tipplemen	9	1 at 2 00 8at 1 87$\frac{1}{2}$	10		157 days. 97 days.

Characteristics of Road.—Length of road, from Pittsburg to Banksville, 3 miles; all single track, with about one mile of sidings; gauge, 4 feet $8\frac{1}{2}$ inches; weight of rail, 53 and 56 pounds; 3 locomotives, 1 passenger car, about 70 coal cars, 1 construction car, 4 wooden bridges, with a total length of about 300 feet; 10 culverts, total length about 200 feet; track laid on stone, timber and coal slack.

The small amount of business done on our road not requiring the number of officers and men enumerated on this blank, you will, I hope, readily understand the cause of vacancies opposite.

June 20, 1876.

JOHN S. HOLLINGSHEAD, *President.*

MONT ALTO RAILROAD CO., MONT ALTO, FRANKLIN CO., PA.

	Men	Pay per day	Average hours worked per day	Av'ge time worked in the year
President	1			
General Manager (*A*)	1			
Chief Engineer (*A*)				
General Ticket Agent (*B*)	1			
General Superintendent (*A*)				
General Purchasing Agent (*A*)				
Secretary of Board of Directors	1			
Directors	7			
Pay Master (*B*)	1			
Chief Telegraph Operator (*B*)				
Telegraph Operators	3		10	313 days.
Ticket Agents	3		10	"
Locomotive Drivers	1	$3 15	10	"
Conductors (Passenger,) Conductors (Freight,)	1	2 08	10	"
Brakemen	1	1 25	10	"
Firemen	1	1 65	10	"
Track Foremen	2	1 54	10	"
Trackmen	6	90	10	"

Characteristics of Road.—(*A.*) One person fills offices of General Manager, Superintendent and Engineer, and does the purchasing.

(*B.*) One person fills office of General Ticket Agent and Paymaster and Chief Telegraph Operator.

The Mont Alto railroad is principally owned by the Mont Alto iron company. The officers are identical. Railroad work is imposed on officers of iron company in addition to their other labors, and additional salary not allowed.

Road is 10½ miles long, from Mont Alto to Mont Alto junction with the Cumberland Valley railroad.

1*st June*, 1876.

GEO. B. WIESTLING,
Superintendent and Engineer.

MONTROSE RAILWAY COMPANY.

Montrose, Susquehanna, Pa.

	Men	Pay per day	Av. hours worked per day	Pay of men per month	Av. time worked in the year-days,
President	1			$50 00	
Secretary of Board of Directors	1			8 34	
Directors	12				
Treasurer	1			41 67	
Ticket Agent	1			15 00	
Locomotive Driver	1	$3 50	10		313
Conductor, (Passenger,)	1		10	100 00	363
Brakemen	2	1 75	10		313
Fireman	1	1 00	10		313
Watchman	1	2 00	10		313
Track Foremen	3	1 50	10		300
Trackmen	11	1 25	10		240

Characteristics of Road.—The Montrose railway is a narrow gauge (3 feet) road of 28 miles in length, extending from Montrose, Susquehanna county, to Tunkhannock, Wyoming county, where it connects with Lehigh Valley railroad; it runs through a thinly settled agricultural district, and has a limited amount of business which will not afford many officers or men.

MAUCH CHUNK, *June* 30, 1876.

JAMES I. BLAKSLEE, *President.*

NORTH PENNSYLVANIA RAILROAD COMPANY.

407 Walnut street, Philadelphia, Pa.

	Men	Pay per day	Boys	Pay per day	Women	Pay per day	Av. hours worked per day	Pay of men per month	Av. time worked in the year
President	1								12 mons.
Chief Engineer & Gen. Sup't,	1								"
Gen'l Freight & Ticket Ag't,	1								"
Master of Transportation	1								"
Ass't..do......do	1								"
General Master Mechanic	1								"
Sec'y of Board of Directors	1								"
Directors*	12								
Treasurer	1								"
Pay Master	1							$100 00	"
Local Engineer	1							90 00	"
Foremen of Shops	2							105 00	310 days.
General Foreman of Shops	1							110 00	"
Soliciting Agents	8							57 54	12 mons.
Chief Clerk of Motive Power,	1							110 00	310 days.
Road Master	1								12 mons.
Chief Cl'k Maintenance Way	1							80 00	310 days.
Clerks	62							53 06	"
Chief Telegraph Operator	1							81 00	"
Telegraph Operators	18							35 00	
Freight and Ticket Agents	28							59 80	
Depot Master	1							100 00	12 mons.
Engine Wipers	16	$1 48					9		310 days.
Train Dispatchers, (Pass.)	2							70 00	
Do......do...... (Freight)	19	1 75							
Locomotive Drivers	60	3 00							
Conductors, (Passenger)	19	3 00							
Do........ (Freight)	17	2 18							
Brakemen, (Passenger)	31	1 64							
Do........ (Freight)	60	1 50							
Firemen	69	1 90							
Watchmen	20	1 50							
Road Track Foremen	37	1 90					10		
Flagmen	22	1 00							
Baggage Masters and Milk Agents	32	1 80							
Masons	15	2 50					10		310 days.
Carpenters	64	2 29					10		"
Car Cleaners	8	0 83			8	$0 83			
Blacksmiths	27	2 10					9		"
Machinists	38	2 40					9		"
Car Inspectors	10	2 08							
Boiler Makers	7	2 46					9		"
Tinner	1	2 50					9		"
Coppersmith	1	2 75	2	$1 00			9		"
Common Laborers	729	1 35	11	0 75			10		312 days.
Switch Tenders	11	1 36							
Painters	8	2 44					10		310 days.
Wood Sawyers	5	1 50							
Engineers of Stationary Engines	3	2 00							
Store Keepers	2	1 85							
Pattern-makers	1	2 75							
Upholsterer	1	2 50							

*No compensation.

Remarks.—It is impracticable to give the number of days and hours worked by several classes of train hands, as they are paid by the trip and not by actual time. FRANK H. IDDINGS, *Auditor.*

October 2, 1876.

PHILADELPHIA AND READING RAILROAD COMPANY, PHILADELPHIA.

	Men	Pay per day	Boys	Pay per day	Women	Pay of men per month	Pay of women per month	Pay of boys per month
President	1					$945 00		
Vice Presidents	2					600 00		
Comptroller and Assistant	2					302 82		
Chief Engineer						450 00		
General Ticket Agent						191 25		
General Superintendent						400 00		
General Solicitor						333 33		
General Master Mechanic						255 00		
Auditors	2					175 32		
General Purchasing Agent	1					360 00		
Secretary of Board of Directors,	1					360 00		
Directors	6					No pay.		
Treasurer and Assistant	2					459 37		
General Freight Agent	1					360 00		
Pay Masters	2					178 50		
Division Superintendents	7					173 79		
Local Engineers	8					134 40		
Master Mechanics of Shops	5					97 09		
General Foremen of Shops	68					68 40		
General Agents	4					153 34		
Chief Clerk of Motive Power	1					113 40		
General Foreman	6					85 50		
Draughtsmen	3					87 75		
Clerks	352		6			52 28		$18 00
Superintendent Telegraph	1					141 75		
Telegraph Operators	173		19		1	39 27	$32 40	15 17
Freight and Ticket Agents	263					46 68		
Depot Masters	3					47 55		
Train Masters	4					68 85		
Train Dispatchers	92					57 60		
Locomotive Drivers	396	$2 83						
Conductors, (Passenger,)	79	2 61						
Conductors, (Freight,)	278	2 07						
Brakemen	1,034	1 78						
Firemen	399	1 87						
Watchmen	573	1 15						
Track Foremen	65					62 55		
Trackmen	1,465	1 16						
Baggage Masters	48	1 82						
Bridge Builders	130	1 71						
Carpenters Car Builders	983	1 53	55	$ 72				
Blacksmiths	306	1 60	15	69				
Machinists	481	1 79	102	69				
Moulders	117	1 40	8	70				
Boiler Makers	103	1 62	10	65				
Tinners	30	1 69	9	67				
Coppersmiths	8	2 00	2	67				
Common Laborers	646	1 29						
Switch Tenders	73	1 26						
Painters	131	1 62	5	73				

Stationary engineers, 45 ; $1 57 per day.

Depot hands, 255 ; $35 48 per month.

Office and car cleaners, 6 ; 1 02 per day ; 43 women, 84 cents per day.

Masons, 35 ; $2 43 per day.

Riggers, 2 ; $1 24 per day.

Telegraph repairsmen, 12 ; $55 36 per month.

For characteristics of the road see page 531, Annual Report of the Secretary of Internal Affairs, Part IV, for 1875.

September 30, 1876.

F. B. GOWEN, *Prest.*

NOTE.—The above embraces the labor reports of the following railroad companies, viz : Philadelphia and Reading, (with branches owned by company,) Allentown, Colebrookdale, East Mahanoy, East Pennsylvania, Perkiomen, Pickering Valley and Reading and Columbia. In addition, the following roads are worked or leased by the Philadelphia and Reading, viz : Catawissa, Chester Valley, Chestnut Hill, Little Schuylkill, Mill Creek and Mine Hill, Mine Hill and Schuylkill Haven, Mount Carbon and Port Carbon, Philadelphia and Chester, Philadelphia, Germantown and Norristown, Schuylkill Valley.

PHILADELPHIA, WILMINGTON AND BALTIMORE RAILROAD.

Philadelphia, Pa.

	Men	Pay per day	Boys	Pay per day	Women	Average hours worked per day	Pay of men per month	Pay of boys per month	Av'ge time worked in the year—days.
President	1								
Vice President	1								
Chief Engineer	1								
General Ticket Agent	1								
General Superintendent	1								
Sec'y of Board of Directors	1								
Directors	15								
Treasurer	1								
Pay Master	1								
Master Mechanics of Shops	3						Av. $183 33⅓		
General Foremen of Shops	10					10	96 40		
Clerks	66						58 47		308
Telegraph Operators	37						56 70		
Depot Masters	2						137 50		
Locomotive Drivers	61						90 60		324
Conductors (Passenger,)	24						80 60		
Conductors (Freight)	28						69 75		
Brakemen	101						55 10		
Firemen	47		14				52 95	$26 95	324
Watchmen	37						46 10		365
Track Foremen	26	$1 00				10	68 00		
Trackmen	174	1 35				10			
Baggage Masters	22						54 20		
Bridge Builders	95	2 25				10			
Carpenters	28	2 35				10			
Car Builders	81	2 13	1	$0 80		10			
Blacksmiths	30	2 42				10			
Machinists	64	2 21	8	92½		10			
Boiler Makers	12	2 30	3	1 00		10			
Tinners	7	2 18	1	80		10			
Coppersmiths	1	3 25				10			
Common Laborers	274	1 40				10			
Switch Tenders	48					12	40 70		324
Painters	37	2 42	3	87½		10			
Bridge Keepers	14						49 75		
Stone Masons	11	2 50				10			
Draughtsmen	2					10	112 50		308
Car Cleaners	21	1 50	1	80	9	10			
Upholsterers	6	2 25				10			
Stationary Engineers	6		1	1 20		11	49 78		312
Locomotive Cleaners	43	1 40				10			
Signalmen	51					12	33 00		324
Porters	15						31 95		
Pattern Makers	2	2 70	1	1 00		10			
Waiting Maids					7		19 86		

June 28, 1876.

S. C. F. KENNEY,
Supt. P., W. and. B. R. R.

PITTSBURGH, FORT WAYNE AND CHICAGO RAILWAY.

Operated by Pennsylvania company, Pittsburgh, Pa.

	Men	Pay per day	Boys	Pay per day	Women	Av. hours worked per day	Pay of men per month	Pay of women per month	Pay of boys per month
President*									
Vice President*									
General Manager*									
Chief Engineer*									
General Ticket Agent*									
General Superintendent*									
General Master Mechanic*									
General Architect*									
General Purchasing Agent*									
Secretary of Board of Directors,*									
Directors*									
Treasurer*									
Pay master	1						$195 00		
Division Superintendents	2						187 50		
Local Engineers	3						135 00		
Master Mechanics of Shops	2						300 00		
General Foremen of Shops	4						112 50		
Traveling Engineers	4						112 50		
Chief Clerks of Motive Power	2						103 50		
Road Foremen, Supervisors	8						90 00		
Chief Clerks Maintenance Way,	2						100 00		
Clerks	259						50 00		
Chief Telegraph Operator	1						90 00		
Telegraph Operators	164				2		50 00	$30 00	
Ticket Agents	96				2		24 60	24 00	
Freight Ticket Agents	89						45 00		
Depot Masters							112 50		
Train Masters	4						110 00		
Train Dispatchers	9						100 00		
Locomotive Drivers, Engineers,	295	$3 65							
Conductors, (Passenger,)	43	3 00					81 00		
Conductors, (Freight,)	412	2 70					72 90		
Brakemen	435	1 73					45 00		
Firemen	295	1 73					45 00		
Watchmen	107						40 00		
Track Foremen	122	1 73				10	45 00		
Trackmen	1,422	1 15	50	90c		10	31 05		$24 30
Baggage Masters	80	†2 60	50				‡45 00		
Carpenters and Car Builders	392	2 50				10			
Blacksmiths	86	2 50				10			
Machinists	190	2 45				10			
Moulders	8	2 70				10			
Boiler Makers	40	2 30				10			
Tinners	15	2 40				10			
Coppersmiths	12	2 50				10			
Common Laborers	827	1 15			35	10		30 60	
Switch Tenders	53					10	36 00		
Painters	60	2 00				10			
Carpenter & Blacksmith helpers,	186	1 50				10			

*We have no such officers whose duties or compensation attach to this road specifically. †Train. ‡Station.

For characteristics of road, see annual report to Secretary of Internal Affairs, year ending December 31, 1875.

June 27, 1876.

J. P. FARLEY, *Auditor.*

PITTSBURGH, VIRGINIA AND CHARLESTON RAILWAY, PITTSBURGH.

	Men	Pay per day	Av. hours worked per day	Pay on mth	Pay of women per month	Pay of boys per month	Av. time worked in the year
President	1	......	8	......	......	......	1 year.
Vice President	1	......	......	......	......	......	“
Chief Engineer and General Sup't	1	$10 00	8	300 00	......	......	“
General Ticket Agent	1	4 20	8	125 00	......	......	“
Treasurer and Sec'y Board of Directors,	1	5 50	8	166 67	......	......	“
Directors	7	......	......	......	......	......	“
Master Mechanic of Shops	1	3 33	10	100 00	......	......	“
Road Foreman	1	2 00	10	50 00	......	......	“
Ticket Agents	11	1 50	10	45 00	......	......	“
Freight Agent	1	3 00	10	100 00	......	......	“
Train Dispatcher	1	3 00	10	90 00	......	......	“
Locomotive Drivers	5	2 75	10	75 00	......	......	“
Conductors, (Passenger,)	3	2 50	10	80 00	......	......	“
Conductors, (Freight,)	2	2 00	10	60 00	......	......	308 dys
Brakemen	6	1 60	10	50 00	......	......	1 year.
Firemen	5	1 60	10	50 00	......	......	“
Watchmen	4	1 40	10	45 00	......	......	“
Track Foremen	5	1 75	10	55 00	......	......	“
Trackmen	20	1 15	10	......	......	......	308 dys
Baggage Masters	2	2 00	10	60 00	......	......	1 year.
Carpenter	1	2 25	10	60 00	......	......	300 dys
Car Builder	1	2 25	10	60 00	......	......	308 dys
Blacksmith	1	2 25	10	60 00	......	......	“
Machinist	1	2 50	10	60 00	......	......	“
*Common Laborers	4	1 25	10	......	$20 00	$15 00	“

*1 boy 50 cents per day; 1 woman 66 cents per day.

This road is now in operation for thirty miles, to Monongahela City, and running up the west bank of the Monongahela river, due south from Pittsburgh. When completed will follow the same river into and through West Virginia.

The traffic already developed is encouraging.

PITTSBURGH AND CASTLE SHANNON RAILROAD, PITTSBURGH.

	Men	Pay per day	Average hours worked per day	Pay of men per month	Av. time worked in the year	
President	1			$225 00	Whole.	
Vice President	1					No salary.
General Manager	1				Whole.	See President.
Chief Engineer	1	$10 00			100 days.	
General Ticket Agent	1					See Paymaster.
General Superintendent	1					See President.
General Master Mechanic	1		12	100 00	Whole.	
General Purchasing Agent	1					See President.
Sec'y of Board of Directors	1				Whole.	See Treasurer.
Directors	10					No salary.
Treasurer	1			93 75		
Pay Master			12	150 00	Whole.	
Chief Clerk of Motive Power,	1			93 75	Whole.	
Road Foremen	2		12	67 50	Whole.	
Chief Cl'k Maintenance Way	1					See motive power.
Clerks	3		12	70 00	Whole.	
Ticket Agents	4		12	60 00 40 00	Whole.	
Locomotive Drivers	4		14 10	100 00 55 00	12 mos. 10 mos.	
Conductors (Passenger,)	2		14	90 00	12 mos.	
Brakemen	2		14	55 00	12 mos.	
Firemen	3		14	30 00	6 mos.	
Watchmen	2		12	38 00	12 mos.	
Track Foremen	2					See Road Foreman.
Trackmen	4		10	40 00	10 mos.	
Baggage Masters	2				12 mos.	See Brakeman.
Carpenters	6	1 75	10	45 00	9 mos.	
Blacksmiths	2	2 00 2 50	10	50 00 60 00	10 mos.	
Common Laborers	100	1 25 1 50	10		10 mos.	
Coal Miners	140	1 75			9 mos.	

Characteristics of Road.—Capital stock, as authorized by law, $1,000,000; amount of stock subscribed, $961,600; amount now paid in of capital stock, $525,622 30; capital stock dividend, 96,160; number of shares of stock issued, 19,232; par value of each share, $50; length of main line of road, 6 miles; length of sidings, $\frac{7}{8}$ mile; length of branch roads, $3\frac{1}{8}$ miles; gauge of road, 40 inches; weight of rail, 45 and 50 lbs; number of locomotives, 6; number of steam pumps and boilers, 3; one pair steam engines and hoisting machinery for incline plane; number first class passenger cars, 3; number second class passenger cars, 4; number coal cars, 416; number wooden bridges on main line, 4, total length, 1,530; number wooden bridges on branches, 1, total length, 950; number of culverts, 4, total length, 300; number of stations, 14; number of wood and water stations, 2; number of tunnels on main line, 1, length, 1,740; number of tunnels on branch, 1, length, 1,766; foundation of track on oak and locust ties, 12 in. ballast; average rate of speed by ordinary passenger trains, including stops, miles per hour, 12; weight of passenger engine, 12 tons; weight of freight engines, 7 to 12 and 20 tons; number of horses and mules, 66; number of wagons, 30; number of sets harness, 67; number of acres (original purchase,) real estate, 831 4 10 acres; number of acres real estate underlaid with coal, now owned by the company, 659 acres; number of buildings, 31; one passenger inclined plane; one coal inclined plane; two inclined plane passenger cares.

June 30, 1876.

M. D. HAYS, *President.*
ED. J. REAMER, *Chief Clerk.*

PITTSBURGH, TITUSVILLE AND BUFFALO RAILWAY.

Pittsburgh, Pa.

	Men	Pay per day	Boys	Pay per day	Av. hours worked per day	Pay of men per month
President	1					
General Ticket Agent	1					$25 00
General Superintendent	1					208 33
General Master Mechanic	1					135 00
Auditor	1					150 00
General Purchasing Agent	1					33 33
Directors	6					
Treasurer	1					116 66
Pay Master	1					25 00
Division Superintendent	1					250 00
General Foremen of Shops	3					105 00
Chief Clerk of Motive Power	1					70 00
Road Foremen	2					90 00
Clerks	42					70 00
Telegraph Operators	24					60 00
Ticket Agents	25					75 00
Depot Masters	5					30 00
Train Dispatchers	3					120 00
Locomotive Drivers	20	$3 60				
Conductors, (Passenger)	7					99 00
Conductors, (Freight)	10	2 70				
Brakemen	44	1 80				
Firemen	20	2 05				
Watchmen	39					30 00
Track Foremen	29					45 00
Trackmen	213	1 25			10	
Baggage Masters	17					41 00
Carpenters	32	2 25				
Car Builders	13	2 65				
Blacksmiths	12	3 00	12	$1 70		
Machinists	24	2 70				
Brass Moulder	1					95 00
Boiler Makers	5	2 90	4	1 70		
Tinner	1	2 95				
Coppersmith	1	3 10				
Common Laborers	45	1 25				
Switch Tenders	5					35 00
Painters	10	2 00				

June 20, 1876.

Pittsburgh, *June 26th*, 1876.

W. Hayes Grier, Esq.,
Chief of Bureau of Industrial Statistics :

Dear Sir :—Enclosed please find labor report of the Pittsburgh, Titusville and Buffalo Railway Company, formerly the Oil Creek and Allegheny River Railway Company. I have also received blank for the Buffalo, Corry and Pittsburgh Railroad. This railroad is owned by the Allegheny Valley Railroad, and operated by the Pittsburgh, Titusville and Buffalo Railway. We paying same wages per day as for employees of this company.

Yours respectfully,
T. F. BROWN, *Auditor.*

PITHOLE VALLEY RAILROAD COMPANY.

This road was purchased to furnish a connecting link between points desirable to reach as depots for the Atlantic and Great Western roads, and not paying to run by itself, has been temporarily abandoned.

H. S. HIUDEKOPER, *President.*

SHENANGO AND ALLEGHENY RAILROAD.

Greenville, Pa.

	Men	Pay per day	Av. hours worked per day	Pay of men per month	Av. time worked in the year-days,
President	1				
Vice President	1				
General Manager	1			$1 25	
Auditor and Superintendent	1			104 16⅔	
Secretary of Board of Directors	1			58 33⅓	
Treasurer	1				
Master Mechanic of Shop	1			100 00	
Road Foreman	1			75 00	
Clerks	3			32 66	
Telegraph Operators and Ticket Agents	7			50 00	
Train Dispatcher and Chief Operator	1			60 00	
Locomotive Drivers	6	$2 92			300
Conductors, (Passenger and Freight,)	5			80 00	
Brakemen	10	2 00			287
Firemen	6	1 75			300
Watchman	2			40 00	
Track Foremen	8		10	45 00	300
Trackmen	34	1 25	10		"
Baggage Master	1	1 35			"
Car Builders	2	1 75			"
Blacksmiths	2	2 25			"
Machinists	2	2 60			"
Common Laborers	8	1 35			"
Switch Tenders, Switching	2	2 12			"

Characteristics of Road.—46 miles of road; weight of rail, 56 pounds per yard; ballast, gravel; 11 miles fish plate pattern, balance chair paterns; gauge, 4 ft. 9¼ inches; cross-ties, oak; northern terminus, Shenango, connects with Erie, Pittsburgh, Atlantic and Great Western railroads; southern terminus, Hilliard's Mills; principal freights, oil and coal.

June 30, 1876.

J. T. BLAIR, *Sup't.*

SOUTH MOUNTAIN IRON COMPANIES RAILROAD.

Mountain Creek, P. O., Cumberland county, Pa.

	Men	Pay of men per month	Av. time worked in the year–months.
Superintendent	1	$100 00	12
Cashier	1	112 50	"
Station Agents	4	36 00	"
Locomotive Driver	1	56 00	"
Conductor, (Freight and Passenger,)	1	60 00	"
Brakeman	1	26 00	"
Fireman	1	44 00	"
Trackmen	2	35 00	"

June 19, 1876.

JONAH BACHMAN, *Cashier*.

SUMMIT BRANCH RAILROAD.

No. 233 South Fourth street, Philadelphia.

	Men	Boys	Pay per day	Pay of men per month
President	1		No pay.	
General Manager	1			$675 00
Superintendent	1			250 00
Secretary of Board of Directors	1			37 50
Directors	9		No pay.	
Treasurer	1			45 00
Road Foreman	1			75 00
Clerk	1			83 33
Telegraph Operators	3			33 33
Ticket Agents	4			15 00
Weigh Masters	3			51 66
Train Dispatchers	1			75 00
Locomotive Drivers	7			75 00
Conductors, (Freight,)	1			40 00
Brakemen	8		$1 78	
Firemen	4		2 00	
Watchmen	4		1 60	45 00
Track Foremen	5		2 00	
Trackmen	16		1 70	
Carpenters	8		20 & 22½ c. p. hour.	
Blacksmiths	8		25 & 16 c. p. hour.	
Machinists	5		20 & 25 c. p. hour.	$100
Common Laborers	5			$40 & 45
Switch Tenders	3		$2 00 & 1 60	
Hostler and apprentices	1	2	1 00 & 1 10	55 00

WILLIAM HOCKER, *Auditor*.

TIOGA RAILROAD, CORNING, N. Y.

	Men	Pay per day	Boys	Pay per day	Women	Pay per day	Average hours worked per day	Pay of men per month	Pay of women per month	Ave'ge time worked in the year
President	1	$16 66					10	$500 00		12 mos.
Vice President	1	6 41					10	166 00		12 "
General Ticket Agt.,	1	4 17					10	125 00		12 "
General Superin't	1	10 00					10	300 00		12 "
Directors	12	No pay.								
Division Superin'ts,	1	1 92					10	50 00		12 "
Master Mech. Shops,	1	5 77					10	150 00		12 "
Gen'l Foreman Shops	1	3 85					10	100 00		12 "
Chief Clerk of Motive Power	1	3 85					10	100 00		12 "
Road Foreman	1	2 31					10	60 00		12 "
Ticket Agents Depot Masters	8	1 92			1	$1 15	10	50 00 30 00	$30 00	12 "
Train Dispatchers	1	6 41					10	166 66		12 "
Locomotive Drivers,	15	3 75 4 00					10			12 "
Conductors, Passen'r	2	3 20 2 87					10 10	83 33 75 00		12 " 12 "
Conductors, Freight,	15	2 00					10			12 "
Brakemen	45	1 75 1 87					10			12 "
Firemen	15	2 25 2 00					10			12 "
Watchmen	2	1 75					10			12 "
Track Foreman	10	1 73					10	45 00		12 "
Trackmen	80	1 12½	2	$1 00			8			12 "
Baggagemasters	2	2 00					10			12 "
Carpenters and Car Builders	30	1 75					8			12 "
Blacksmiths	8	1 75					8			12 "
Machinists	15	2 50					8			12 "
Boilermakers	1	2 80					8			12 "
Painters	1	2 50					8			12 "

Characteristics of road.—Length of road, $30\frac{6}{10}$ miles; gauge of road, 6 feet; track laid and foundation on oak, chestnut and hemlock ties, fish plate joints, gravel and loam.

F. N. DRAKE, *President Tioga R. R.*

WILMINGTON AND READING, COATESVILLE, PA.

	Men	Pay per day	Women	Av. hours worked per day	Pay of men per month	Pay of women per month	Av. time worked in the year
General Agent	1				$331 16		313 days.
General Superintendent	1				291 66		313 "
Treasurer	1				185 00		313 "
Master Mechanics of Shops	1				80 00		313 "
Road Foreman	2				75 00		310 "
Cerks	5				60 00		313 "
Telegraph Operators	2		1		50 00	$50 00	313 "
Ticket Agents	20				42 35		313 "
Train Dispatchers	1				37 50		313 "
Locomotive Drivers	8	$2 17		12			313 "
Conductors, (Passengers,)	3	2 14		12			313 "
Conductors, (Freight,)	5	2 00		12			313 "
Brakemen	11	1 30		12			313 "
Firemen	7	1 50		12			313 "
Watchmen	6	1 50		12			365 "
Track Foremen	19	1 25		10			300 "
Trackmen	42	1 10		10			300 "
Baggage Masters	3	1 43		12			313 "
Bridge Builders	2	2 10		10			300 "
Carpenters	4	1 80		10			300 "
Blacksmiths	2	1 80		10			300 "
Machinists	3	2 00		10			300 "
Boiler Makers	1	2 10		10			300 "
Common Laborers	3	1 20	2	10		15 50	300 "
Switch Tenders	3			12	37 50		313 "
Engine Wipers	3	1 50		10			360 "

WEST CHESTER AND PHILADELPHIA RAILROAD COMPANY.

3100 Chestnut street, Philadelphia.

	Men.	Pay per day.	Pay of men per month.	Av. time worked in the year.
President	1		$125	12 months.
General Ticket Agent	1		100	
General Superintendent	1		291	
General Master Mechanic	1		100	
General Architect	1		125	
Secretary of Board of Directors	1		41	
Directors	9		None.	
Treasurer	1		150	
Road Foremen	1		65	
Clerks	4		49	
Chief Telegraph Operator	1		50	
Telegraph Operators	4		36	
Ticket and Freight Agents	25		22	
Depot Masters	2		40	
Train Masters	1		90	
Dispatchers	1		75	
Locomotive Drivers	8	$3 13		
Conductors, (Passenger)	6	2 55		
Conductors, (Freight)	1	2 45		
Brakemen	12	1 55		
Firemen	8	1 87		
Watchmen	3		40	
Track Foremen	7	1 80		
Trackmen	29	1 35		
Baggage Masters	4	1 75		
Freight Agents	3		75	
Car Builders	8	2 55		
Blacksmiths	4	2 25		
Machinists	5	2 30		
Coppersmiths	1	2 50		
Common Laborers	25	1 45		
Switch Tenders	3	1 20		
Painters	5	2 55		

Characteristics of Road.—$26\frac{3}{10}$ miles long single track road.

June 28, 1876.

A. D. SHARPLES,
Auditor and General Freight Agent.

THE BLOCK SYSTEM ON THE PENNSYLVANIA RAILROAD.

The scarcity of accidents on the Pennsylvania railroad during the progress of the Exposition, when millions of passengers were carried, was largely attributable to the efficiency of the block system of railway signals. It consists simply in dividing a line of railway into sections or blocks, of such length that the movement of trains thereon can be easily observed and recorded by telegraph operators stationed in signal towers at the end of each block. As might be expected the signal towers are nearly equal in number to the stations, a few of the minor stations only being without signal towers in the perfected block system. In accordance with its usual far seeing policy, the Pennsylvania railroad company was the first to introduce on this side the Atlantic, the system of train signals outlined above. The company's first efforts in this direction were begun a few months since. The work once begun was sure to be completed, and the block system is in operation on the New York division and on the main line between Philadelphia and Pittsburg. On the main line the system was first used between Philadelphia and Paoli station. It was afterward extended to this city, and then between Altoona and Pittsburg, and recently it has been established on the middle division of the road.

East of Harrisburg on the main line, a distance of one hundred and six miles, there are forty-two signal stations, thus giving an average interval from one to another of about two and one-third miles. Further west on the road the distances between the signal stations are considerably greater. The apparatus of each station comprises a signal box, located near the track so as to be easily seen by engineers of trains approaching from either direction and the telegraph instrument within. The signal box proper stands about eighteen feet from the ground and consists of sliding green and red signals, two on each side, of different colors. These signals can be seen from a considerable distance during the day, and are illuminated at night by a powerful lamp at the centre of the box, which is divided into two compartments by a sheet of block tin, this last named feature serving to make more plain the white light or signal which appears when the two others mentioned are withdrawn. Red merino cloth is used for one of the colored signals and stained glass answers for the other. Four strong cords connect the two red and green signals on each side with the working room of the tower. By this means the operator can conveniently make the necessary changes in the signals. Red is the stationary signal, is suggestive of danger, and informs the engineer of an approaching train that he cannot pass until a second signal shows that the block is clear.

This information is conveyed by showing the white signal. A green signal is understood to mean that the engineer can proceed, but with caution, the block not being entirely clear of trains. Two operators are required at each signal tower, one being on duty during the day and the other at night. The exact time at which each train reaches a station is telegraphed at once to the operator at the next succeeding station. He is thus informed that the block is not clear, and if the approaching train be from the west the stationary red signal compels the engineer of a western bound train to come to a dead stop without venturing on the occupied block. The order conveyed by the red signal is absolute and no engineer dares to disobey it. It is thus seen that every engineer in approaching a signal tower knows beyond all doubt the condition of the track between the given point and the succeeding station. The red signal is so arranged as to fall into position of its own accord, and to remain unless drawn upward by the operator.

No passenger train is allowed to pass a station while another train of the same class is on the block or between the two stations without a special order from the superintendent. The precaution renders collisions impossible. Freight trains are allowed to run on a block in quick succession from two to five minutes behind each other.

THE AMOUNT OF FREIGHT, SPECIFYING THE QUANTITY IN TONS, CARRIED OVER THE FOLLOWING RAILROADS.

NAME OF COMPANY.	Anthracite coal.....	Bituminous coal....	Petroleum and other oils...............	Pig iron............	Railroad iron.......	Other iron or castings...............	Iron and other ores,
Allegheny Valley	2,992	710,481	850,467	41,210	4,067	19,693	66,188
Atlantic and Great Western	63,111	695,357	390,592	71,113		83,223	172,315
Bachman Valley		1,747					7,956
Barclay Coal Company		371,788					
Bellefonte and Snow Shoe	59	81,908	26			87	
Bell's Gap		70,711					
Buffalo, New York and Philadelphia	69,891	63,347	521	652	1,870	3,615	
Catasauqua and Fogelsville	24,867	6,019		10,800	7,091	474	95,539
Chartiers		24,415	30			69	
Cleveland and Pittsburgh		684,129	11,220	53,682	3,706	40,892	230,887
Cornwall	49,104			40,056			111,371
Corning, Cowanesque and Antrim	2,692	575,948	295	38		889	
Cumberland Valley	103,223	6,900	407	5,162		5,610	60,130
Delaware and Hudson Canal	2,492,644						41,719
Delaware, Lackawanna and Western	3,404,242	11,113	2,324	33,042	29,578	16,116	36,954
Dunkirk, Allegheny Valley and Pittsburg	5,002	132,739	125,098	40		420	4
East Broad Top Coal	376	63,309	37		2		77
Edgewood		24,612					
Elmira and Williamsport		381,723	552	6,222	612	6,209	1,845
Erie	3,292,394	560,173	230,230				
Erie and Pittsburg		248,307	51,551	60,520	2,434	11,544	124,267
Hanover Junction, Hanover and Gettysburg,	18,978	1,541					23,028
Harrisburg and Potomac	5,224	595		1,738	136		28,123
Huntingdon and Broad Top Mountain	1,621	380,075	214	12,725		1,430	45,890
Ironton	7,391						46,563
Lake Shore and Michigan Southern	58,645	635,466	530,986	52,659	28,013	117,727	3,942
Lawrence		137,762	165	44,886	129	3,733	71,120
Lawrenceville and Evergreen		102					
Lehigh and Lackawanna	10,224						8,535

THE AMOUNT OF FREIGHT, SPECIFYING THE QUANTITY IN TONS—*Continued.*

NAME OF COMPANY.	Anthracite coal	Bituminous coal	Petroleum and other oils	Pig iron	Railroad iron	Other iron or castings	Iron and other ores,
Lehigh and Susquehanna	2,514,796	320	157	10,370	2,500	12,055	16,111
Lehigh Valley	3,670,880	55,901	150,512	193,599	36,573		432,716
Little Saw Mill Run		86,452					
M'Kean and Buffalo	154	32,035					
Mont Alto		3,147				1,624	2,011
Montrose	3,648						
New Castle and Beaver Valley		201,593	1,058	136,049	2,148	17,638	67,277
New Castle and Franklin		1,932	84	326	494	32	738
New Castle and Mining		34,377					
Northern Central		1,224,458	286,779	34,028	10,020	29,439	62,227
North-East Pennsylvania	6,784	13					6,552
North Pennsylvania	471,763	3,456	1,508	36,988	5,927	7,618	42,262
Oil Creek and Allegheny River	18,751	313,344	293,096			8,544	
Pennsylvania	981,428	3,750,008	489,248	269,748	130,472	221,876	266,205
Pennsylvania Coal	1,511,554						
Pennsylvania and New York Canal and	837,841	375,413		5,362	952	3,329	
Philadelphia and Baltimore Central	22,823	2,498	372			6,964	10,669
Philadelphia and Erie	723,648	166,978	303,442	15,810	10,627	40,299	3,917
Philadelphia and Reading	5,882,658	283,451	174,998	200,706	46,256	171,574	399,766
Philadelphia, Wilmington and Baltimore	51,493	3,972	11,297	8,078	5,441	22,584	11,497
Pittsburg, Cincinnati and St. Louis		579,589	4,176	15,182	10,284	34,657	15,084
Pittsburg and Connellsville		448,743	62,762	19,156	1,356	59,782	24,881
Pittsburg, Fort Wayne and Chicago		291,377	9,906	183,894	9,738	95,679	82,312
Pittsburg, Virginia and Charleston		43,890					21,622
Pittsburg and Castle Shannon		104,412					
Reading and Columbia	165,724						
Shamokin Valley and Pottsville	884,247		85	500	608	568	
Sharpsburg, Wheatland, Sharon and Greenfield		10,135					
Shenango and Allegheny		113,481	142,831			103	

Somerset and Mineral Point	......	150	80	30	......	10	......
South Mountain Iron Company's	5,903	......	......	......	......	......	5,582
Stony Creek	6,124	......	......	112	......	......	1,321
Sunbury and Lewistown	84,868	126	......	......	......	......	......
Tioga	574	502,368	......	11	64	......	......
West Chester and Philadelphia	......	45,062	......	......	......	......	......
Western Maryland	......	43,307	......	......	......	......	5,024
Wheeling, Pittsburg and Baltimore	......	1,670	44	......	......	136	......
Wilmington and Reading	41,342	51,423	......	31,109	......	25,973	22,315
Wilmington and Western	2,294	37,805	21	458	1	1,511	12
Total	27,445,177	14,693,253	4,127,171	1,598,061	351,262	1,073,790	2,676,554

THE AMOUNT OF FREIGHT, SPECIFYING THE QUANTITY IN TONS—*Continued.*

NAME OF COMPANY.	Lime, limestone, sandstone and slate,	Agricultural products	Merchandise and manufactures	Live stock	Lumber	Other articles
Allegheny Valley	62,874	31,445	171,154	1,057	78,119	15,248
Atlantic and Great Western	50,146	237,496	250,092	32,542	58,981	324,433
Bachman Valley	2,023		2,920		290	
Barclay Coal Company		419	719	5	3,538	1,185
Bellefonte and Snow Shoe	506	708	399		4,691	5,093
Bell's Gap			291		872	23
Buffalo, New York and Philadelphia	2,271	24,575	24,890	5,681	54,372	61,777
Catasauqua and Fogelsville	66,782	3,223	5,298		8,617	1,474
Chartiers	926	1,329	5,142	2,539	3,128	469
Cleveland and Pittsburg	59,261	34,796	113,996	11,826	40,512	38,973
Cornwall	12,938					7,193
Corning, Cowanesque and Antrim	1,224	5,882	7,555	10	17,925	8,923
Cumberland Valley	3,894	37,301	90,769	6,271	33,480	4,217
Delaware and Hudson Canal		20,543	21,833	1,924	18,827	9,221
Delaware, Lackawanna and Western	62,704	65,822	93,155	6,524	126,573	10,197
Dunkirk, Allegheny Valley and Pittsburg	746	8,384	6,163	551	23,060	5,885
East Broad Top Coal	360	3,413	2,894	3	1,377	170
Elmira and Williamsport	1,216	79,168	29,518	936	27,578	11,663
Erie		787,366	738,263	107,392	131,607	392,518
Erie and Pittsburg	43,892	12,821	25,973	3,855	20,380	4,064
Hanover Junction, Hanover and Gettysburg,	5,904		37,422	2,086	6,474	
Harrisburg and Potomac		1,082	156		779	
Huntingdon and Broad Top Mountain	17,768	4,629	3,453	288	17,365	
Ironton	12,875					2,413
Lake Shore and Michigan Southern	150,096	1,042,125	481,181	410,152	511,055	1,000,445
Lawrence	88,770	5,079	3,784	4,948	4,092	5,361
Lawrenceville and Evergreen						32
Lehigh and Lackawanna	11,710	809	1,998		524	
Lehigh and Susquehanna,	39,422	11,966	89,018	185	46,837	7,746

Lehigh Valley	75,048			14,726	91,570	674,040
Little Saw Mill Run						57
Mont Alto						1,040
M'Kean and Buffalo	258	95	719		1,949	
Montrose					2,285	3,990
New Castle and Beaver Valley	135,152	17,610	16,631	8,707	10,678	19,580
New Castle and Franklin	102	1,439	1,736	184	4,184	119
Northern Central	37,221	417,574	274,189	29,036	241,322	113,899
North Pennsylvania	38,137	131,476	108,748	3,703	57,536	2,881
North-East Pennsylvania	11	1,101	4,197	211	1,584	
Oil Creek and Allegheny River	2,703	11,630	23,431		26,224	41,988
Pennsylvania	242,133	1,240,269	664,211	375,945	437,495	46,330
Pennsylvania Coal			2,626		4,067	
Pennsylvania and New York Canal and	7,529		220,236	14,118	31,350	
Philadelphia and Baltimore Central	7,005	30,006	25,846	2,138	6,506	23,962
Philadelphia and Erie	28,516	564,044	161,321	9,603	347,945	20,284
Philadelphia and Reading	461,308	501,852	117,739	25,371	249,313	371,325
Philadelphia and Trenton						2,053,024
Philadelphia, Wilmington and Baltimore	58,725	70,582	42,403	22,214	18,440	6,583
Pittsburg, Cincinnati and St. Louis	30,478	285,291	302,312	140,396	36,324	81,341
Pittsburg and Connellsville	56,341	28,019	43,532	1,942	34,617	15,257
Pittsburg, Ft. Wayne and Chicago	149,001	331,523	250,405	396,766	183,994	180,749
Pittsburg, Virginia and Charleston	1,980	3,578	8,678	1,028	1,340	4,381
Pittsburg and Castle Shannon						778
Reading and Columbia			124,630			
Shamokin Valley and Pottsville	3,747	3,218	5,090	198	11,987	1,175
Shenango and Allegheny	5	523	1,652	1	3,220	2,267
Somerset and Mineral Point	620	190	3,210	200	2,140	617
South Mountain Iron Company's					875	7,236
Stony Creek			7,035		769	
Summit Branch						603,967
Sunbury and Lewistown				74	10,401	24,383
Spring Brook					10,000	2,000
Tioga	511	4,208	8,240	20	3,376	
West Chester and Philadelphia	8,165	8,926	20,133		6,405	5,667
Western Maryland	3,209	9,464		2,090	6,816	36,884
Wheeling, Pittsburg and Baltimore	209	944	3,530	407	2,531	
Wilmington and Reading	15,547	12,883	23,857		11,146	10,766
Wilmington and Western	968	740	5,982		3,106	7,083
Total	2,051,062	6,097,565	4,689,355	1,647,853	3,102,548	6,282,079

THE FOREIGN COMMERCE OF THE PORT OF PHILADELPHIA.

[Reported by Peter Wright & Sons.]

The foreign trade of Philadelphia for 1876 aggregated nearly seventy-one millions—a much larger sum than was reached by the trade of any previous year. It is fifteen millions more than the foreign trade of 1875, and over twelve millions more than the foreign trade of the heaviest year previously reported—1873. During last year Philadelphia imported $20,298,763 and exported $50,552,300. The imports are three and three-quarter millions less than they were last year, and the exports are eighteen and one-half millions more. Compared with our year of heaviest imports, (1873,) the decline in amount of imports has been nine millions, but considering the decline in prices since then, there probably arrived last year nearly as large an amount of goods. We have reason to felicitate ourselves on the fact that in 1876, notwithstanding declining prices and dull times, our foreign trade was three times as great in value as the foreign trade of 1866, ten years before. No other Atlantic port can show an equal ratio of increase. Our contributions to the National Treasury in customs last year were $7,643,627. The number of immigrants landed at Philadelphia during the year was 7,182.

The leading countries contributing imports to our port last year were England, sending 11¼ millions, which is more than one-half the total; Cuba, over 4½ millions; Belgium, over one million; Italy, over one million; Germany, one-third of a million, and Spain and Venezuela, each more than a quarter of a million. The leading articles which arrived were sugar and molasses to the value of nearly $5,000,000; wool and woollens over $1,800,000; tin plates, nearly $1,500,000; fruits, over $1,100,000; iron and its manufactures, $1,000,000; cotton goods, nearly $1,000,000; drugs and chemicals of various kinds, $1,000,000; flax and linens, nearly $900,000; soda ash, $700,000; silks, opium and paintings, each a half million; wines and spirits, over $300,000; coffee, hides, sulphur, and earthenware, each about $300,000, and medicinal barks, paper stock, sulphur, leather, precious stones and salt, each about a quarter of a million.

Of our export trade, nearly three-fifths went to Great Britain and Ireland, which took about thirty millions; Belgium took eight and a half millions; Germany, four and two-third millions; Cuba, the British West Indies, Italy and France, each about one million; the Netherlands and Portugal, each over $600,000; Brazil, Gibraltar and Venezuela, each a half million; and Austria and Denmark, each a quarter of a million. The leading articles exported were sixteen millions of breadffstus, twelve and a quarter millions of provisions, and nearly twelve millions of petroleum. In each of these three articles there was a great increase over the exports of 1875, we having sent out nearly seven millions more breadstuffs, six millions more petroleum. We also exported over $2,600,000 of cotton, one and a half millions each of tallow and tobacco; one million of leather, nearly $700,000 of wooden ware and cooperage, and a half million each of furs and oil cake. Our export of iron manufactures was over a half million, of which the greater part was steam engines. We also exported to foreign ports nearly $250,000 worth of coal, which it is hoped will be the opening of a lucrative foreign trade in that great staple.

This is but a brief summary of the rapidly growing trade of this port, and the accompanying detailed statement of its imports and exports should claim the careful attention of all interested either in the welfare of the State or of the Port of Philadelphia.

FOREIGN IMPORTS.

Statement of import entries of commodities brought from foreign countries in American and foreign vessels, into the customs district of Philadelphia, during the year 1876.

ARTICLES.	Quantity.	Value.	Totals.
AUSTRIA.			
Subject to duty :—			
Fruits		$36,051	$36,051
BELGIUM.			
Free of duty :—			
Argols, lbs	112,573	16,924	
Bark, medicinal, lbs	121,400	66,141	
Books		677	
Chemicals		110,343	
Cochineal, lbs	24,386	11,877	
Coffee, lbs	277,760	47,944	
Graphite		1,878	
Hides		48,872	
Instruments, Philosophical		1,386	
Madder, lbs	25,041	1,584	
Paintings		15,932	
Paper material		3,126	
Plumbago		3,745	
Seeds		1,437	
Shells		14,089	
Sauerkraut		1,266	
Miscellaneous		803	
Total free		348,024	
Subject to duty :—			
Beer and ale, gallons	3,892	1,552	
Books		1,533	
Brass manufactures		1,096	
Chemicals		14,669	
Clay and clay pipes		9,267	
Cotton manufactures		19,463	

FOREIGN IMPORTS—Continued.

ARTICLES.	Quantity.	Value.	Totals.
BELGIUM—Continued.			
Earthenware		$1,025	
Fancy goods		6,853	
Fruits		954	
Furs		18,525	
Glass and manufactures		15,958	
Iron—Pig, ℔s	16,228,679	303,163	
Other manufactures		22,795	
Jewelry		1,275	
Leather and manufactures		8,705	
Metal manufactures		3,061	
Musical instruments		1,300	
Oils		1,230	
Paintings		8,714	
Paints		2,218	
Paper manufactures		4,466	
Pickles		3,657	
Perfumery		2,924	
Plants		987	
Provisions		30,728	
Silk manufactures		31,926	
Spices, ℔s	5,157	2,678	
Tobacco manufactures		1,818	
Tin manufactures		2,736	
Spirits, gallons	32,177	32,393	
Wine, gallons	129,071	134,234	
Wax		2,295	
Wood manufactures		8,286	
Wool manufactures		10,613	
Zinc, in sheets, ℔s	83,771	5,186	
Miscellaneous		1,194	
			$1,067,501
FRENCH WEST INDIES.			
Subject to duty:—			
Sugar, ℔s	5,307,428	184,209	
Miscellaneous		272	
			184,481
BRAZIL.			
Free of duty:—			
Miscellaneous		85	85
Subject to duty:—			
Fancy goods		948	
Iron old, tons	420	3,998	
Jewelry		629	
Miscellaneous		546	
			6,206
CENTRAL AMERICAN STATES.			
Subject to duty:—			
Fruits		1,014	1,014
GREENLAND.			
Free of duty:—			
Kryolite		96,249	
Mica		10,000	
Specimens of Natural History		773	
			107,022
FRANCE.			
Free of duty:—			
Stallions	6	3,561	
Miscellaneous		1,364	
Total free		4,925	
Subject to duty:—			
Buttons		1,689	

FOREIGN IMPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Totals.
FRANCE—CONTINUED.			
Cotton manufactures		$4,960	
Chemicals and drugs		1,526	
Earthenware		1,223	
Fancy goods		2,768	
Glass manufactures		3,454	
Iron manufactures		2,408	
Jewelry		8,855	
Marble manufactures		1,193	
Metal manufactures		4,253	
Oil—Olive, gallons	4,489	10,681	
Perfumery		670	
Silk manufactures		15,566	
Vegetables		2,108	
Watches		2,898	
Spirits, gallons	4,627	8,627	
Wine, gallons	37,523	42,995	
Wool manufactures		9,212	
Miscellaneous		7,057	
			$137,068
GERMANY.			
Free of duty :—			
Articles of the United States		1,098	
Chemicals		25,907	
Graphite		7,131	
Plumbago		1,619	
Paper material		76,874	
Salt, dunging		8,739	
Miscellaneous		673	
Total free		122,041	
Subject to duty :			
Chemicals and drugs		9,143	
Clay and clay pipes		17,969	
Earthen and stoneware		8,549	
Fancy goods		32,898	
Glass manufactures		9,363	
Iron—Pig, lbs	240,492	2,692	
Bar, lbs	224,499	5,544	
Other manufactures		20,114	
Lead, lbs	1,007,833	48,019	
Marble and stone manufactures		3,050	
Mineral substances		3,894	
Musical instruments		5,750	
Paper manufactures		1,565	
Silk manufactures		1,983	
Wine, gallons	1,177	1,164	
Wood manufactures		3,326	
Wool manufactures		14,544	
Miscellaneous		2,649	
			314,367
ENGLAND.			
Free of duty :—			
Antiquities		3,600	
Argols, lbs	899,726	139,739	
Articles of United States		2,655	
Bark, medicinal, lbs	304,946	153,381	
Books		12,001	
Chalk		2,211	
Chemicals		130,456	
Chloride of lime, lbs	7,422,319	129,366	
Cochineal, lbs	85,143	41,286	
Cotton, raw, lbs	21,342	2,170	
Cutch, lbs	82,328	4,347	
Dyewoods, cwts	12,357	16,069	

FOREIGN IMPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Totals.
ENGLAND—CONTINUED.			
Fur skins		$1,973	
Gums, ℔s	315,484	40,699	
Gut strings		1,719	
Hair, unmanufactured, ℔s	25,288	2,961	
Hides		257,376	
Indigo, ℔s	29,183	22,512	
Ivory		2,543	
Mineral substances		1,306	
Models		4,395	
Oils		4,241	
Paintings		11,928	
Paper material		8,890	
Plants		980	
Platinum		6,360	
Seeds		4,852	
Sheathing felt		822	
Shells		13,652	
Silks, raw, ℔s	1,442	10,188	
Soda, nitrate, ℔s	1,210,785	31,759	
Tea, ℔s	1,456	845	
Tin, in bars, cwts	379	7,604	
Miscellaneous		5,350	
Total free		1,080,236	
Subject to duty:—			
Beer and ale, gallons	27,103	24,125	
Blacking		4,113	
Books		89,021	
Brass manufactures		16,027	
Breadstuffs		15,039	
Buttons		27,585	
Cement		8,163	
Chalk, prepared		2,675	
Chemicals		344,201	
Clay and clay pipes		22,104	
Clocks		16,543	
Coal, bituminous, tons	4,224	10,433	
Copper manufactures		4,453	
Cotton.......do		935,268	
Earthern and stoneware		239,539	
Emery stone		4,190	
Fancy goods		67,113	
Feathers		900	
Fish		3,976	
Flax manufactures		885,155	
Fruits		240,293	
Furs		56,432	
Ginger ale		4,384	
Glass and manufactures		55,424	
Glucose		6,367	
Grape sugar		2,216	
Hair manufactures		14,402	
Hemp, raw, tons	9	2,262	
India rubber manufactures		6,873	
Ink		15,191	
Instruments, philosophical		2,072	
Iron—Pig, lbs	6,568,434	93,265	
Bar, lbs	786,407	21,426	
Sheet, lbs	20,596	1,338	
Hardware		4,332	
Anchors, lbs	426,062	24,642	
Machinery		79,781	
Muskets and rifles		11,378	
Steel ingots		106,492	

FOREIGN IMPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Total.
ENGLAND—CONTINUED.			
Iron—Other manufactures		$245,437	
Jewelry		27,533	
Jute manufactures		11,396	
Lead, lbs	16,828	796	
Leather and manufactures		219,618	
Marble and stone manufactures		20,225	
Metal manufactures		17,465	
Musical instruments		13,745	
Oilcloth		1,785	
Oils—Olive, gallons	966	2,587	
Others		7,059	
Opium, lbs	129,853	514,391	
Paintings		434,214	
Paints		24,752	
Paper manufactures		45,615	
Percussion caps		20,868	
Perfumery		14,338	
Pickles and sauces		23,496	
Precious stones		184,717	
Provisions		6,829	
Salt, lbs	78,102,445	178,969	
Seeds		15,874	
Seepskins with wool		1,569	
Silk manufactures		458,300	
Soap		8,155	
Soda—Bicarbonate, lbs	44,800	979	
Carbonate, lbs	36,085,492	602,525	
Caustic, lbs	2,672,986	76,012	
Spices, lbs	57,872	16,279	
Sponges		5,686	
Straw manufactures		2,775	
Tiles		10,465	
Tinplates, cwt	269,661	1,419,353	
Tin manufactures		2,869	
Tobacco and manufactures		2,480	
Trees and plants		6,641	
Umbrellas		2,420	
Vegetables		6,373	
Wax manufactures		2,031	
Watches		10,634	
Spirits, gallons	21,021	31,564	
Wines, gallons	28,764	51,850	
Wood manufactures		40,633	
Wood, unmanufactured, lbs	1,004,768	193,110	
Wool manufactures		1,647,011	
Miscellaneous		76,949	
			$11,287,801
IRELAND.			
Subject to duty:—			
Marble and stone		1,974	
Miscellaneous		439	
			2,413
NOVA SCOTIA.			
Free of duty:—			
Fish		4,743	
Gypsum, tons	8,845	9,283	
Wood, unmanufactured		7,850	
Miscellaneous		727	
Total free		22,603	
Subject to duty:—			
Chemicals		1,847	
Marble and stone		7,140	
Plaster, calcined		9,028	

FOREIGN IMPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Total.
NOVA SCOTIA—CONTINUED.			
Potatoes, bushels	5,056	$2,886	
Spirits, gallons.	3,054	6,091	
Wines, gallons	4,140	2,921	
Wood and lumber		19,139	
Miscellaneous		396	
			$72,051
BRITISH WEST INDIES.			
Free of duty :—			
Articles of the United States		1,233	
Cocoanuts		2,318	
Dyewood, cwts	44,204	43,542	
Guano, tons	305	1,671	
Miscellaneous		415	
Total free		49,179	
Subject to duty :—			
Asphaltum		1,096	
Fruits		42,287	
Potatoes, bushels	14,975	10,902	
Salt, ℔s	19,008,937	15,900	
Sugar, ℔s	543,566	19,210	
Molasses, gallons	181,654	86,401	
Vegetables		16,401	
Miscellaneous		1,909	
			193,375
GREECE.			
Subject to duty :—			
Fruits		52,736	
			52,736
HAYTI.			
Free of duty :—			
Coffee, ℔s	2,464	442	
Dyewood, cwts.	26,968	25,694	
			26,136
ITALY.			
Free of duty :—			
Articles of the United States		1,168	
Chemicals		21,352	
Oils		6,933	
Paintings		32,092	
Paper material		159,504	
Specimens of natural history		3,980	
Sulphur, tons	8,674	258,446	
Miscellaneous		1,029	
Total free		484,504	
Subject to duty :—			
Books		686	
Chemicals		113,441	
Fruits		449,248	
Hemp, raw, tons	34	9,765	
Jewelry		7,863	
Marble		74,142	
Oils :—Olive, gallons	2,542	3,868	
Other		2,512	
Paintings		19,781	
Soap, ℔s	165,149	14,049	
Wine, gallons	784	654	
Wood manufactures		1,387	
			1,185,469
MEXICO.			
Subject to duty :—			
Jute, raw, tons	255	17,307	17,307

FOREIGN IMPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Total.
NETHERLANDS.			
Free of duty:—			
Chemicals		$3,563	
Subject to duty:—			
Clay and clay pipes		16,637	
Cotton manufactures		2,568	
Iron, pig, ℔s	4,791,507	47,862	
Iron manufactures		1,291	
Marble		1,004	
Perfumery		754	
Spirits, gallons	28,859	11,952	
Wine, gallons	2,460	2,050	
Miscellaneous		2,724	
			$90,405
DUTCH WEST INDIES.			
Free of duty:—			
Miscellaneous		75	
Subject to duty:—			
Fruits		871	
Metals		1,164	
Salt, ℔s	810,357	878	
			2,988
PERU.			
Free of duty:—			
Soda, nitrate, ℔s	4,377,465	110,819	110,819
PORTUGAL.			
Free of duty:—			
Cork bark		52,464	52,464
Subject to duty:—			
Marble		1,074	
Salt, ℔s	4,555,054	4,163	
Miscellaneous		199	
			57,900
SPAIN.			
Subject to duty:—			
Fruits		242,243	
Iron ore		17,745	
Salt, ℔s	873,180	874	
Wine gallons	6,000	2,511	
			263,373
CUBA.			
Free of duty:—			
Articles of the United States		4,644	
Cocoanuts		3,915	
Paper material		1,034	
Total free		9,543	
Subject to duty:—			
Asphaltum, tons	580	1,833	
Fruits		27,800	
Honey, gallons	6,635	5,269	
Iron, old, tons	182	2,595	
Metals		7,654	
Sugar, ℔s	58,560,538	2,193,256	
Molasses, gallons	12,331,412	2,335,448	
Melado, ℔s	1,153,581	31,515	
Tobacco leaf, ℔s	10,516	4,862	
Tobacco, segars, ℔s	1,422	4,373	
Miscellaneous		472	
			4,624,670
PORTO RICO.			
Subject to duty:—			
Sugar, ℔s	2,567,556	98,319	
Molasses, gallons	136,175	34,914	
			133,233

FOREIGN IMPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Total.
SWEDEN.			
Free of duty :—			
Miscellaneous	....	$139	....
Subject to duty :—			
Books	....	1,067	....
Iron manufactures	....	55,497	....
Jewelry	....	2,172	....
Paintings	....	1,362	....
Miscellaneous	....	1,507	....
			$61,744
UNITED STATES OF COLOMBIA.			
Free of duty :—			
Cocoanuts	....	3,450	....
Cotton, raw, ℔s	5,565	695	....
Total free	....	4,145	....
Subject to duty :—			
Brass	....	3,541	....
Fruits	....	1,066	....
Miscellaneous	....	94	....
			8,846
VENEZUELA.			
Free of duty :—			
Chemicals	....	1,492	....
Cocoanuts	....	203	....
Coffee, ℔s	1,438,351	244,588	....
Guano, tons	673	7,004	....
Total free	....	258,287	....
Subject to duty :—			
Miscellaneous	....	50	253,337
			....
Total	....	....	20,298,763

SUMMARY STATEMENT OF IMPORTS FOR 1876.

ARTICLES.	Quantity.	Value.
Commodities free of duty—		
Animals, living	....	$3,561
Antiquities	....	3,600
Argols, lbs	994,349	156,663
Articles of the United States	....	10,798
Barks—medicinal, lbs	426,344	219,522
Cork	....	52,464
Books	....	12,827
Chalk	....	3,077
Chemicals	....	293,560
Chloride of lime, lbs	7,402,319	129,366
Cochineal, lbs	99,519	48,058
Cocoanuts	....	9,886
Coffee, lbs	1,719,089	293,084
Cotton, raw, lbs	26,900	2,865
Cutch, lbs	82,328	4,347
Dyewoods, cwts	83,529	85,305
Fish, fresh	....	5,743
Fur skins	....	1,937

SUMMARY STATEMENT OF IMPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.
Commodities free of duty—		
Graphite		$9,009
Guano, tons	978	8,675
Gums, lbs	315,484	40,649
Gypsum, tons	8,445	9,283
Gutstrings		2,300
Hair, unmanufactured, lbs	25,988	2,971
Hides		307,051
Household effects		944
Indigo, lbs	29,183	22,512
Instruments, scientific		2,035
Ivory		2,543
Kryolite		96,249
Madder, lbs	25,041	1,584
Mineral specimens		1,306
Mica, tons	10	10,000
Models		4,438
Oils		11,421
Paintings		49,952
Paper material		243,428
Platinum		6,360
Plumbago		4,864
Salt, dunging, tons	1,128	8,739
Seeds		6,406
Shells		27,201
Silk, raw, lbs	1,442	10,188
Soda, nitrate, lbs	5,589,250	142,578
Specimens of natural history		4,286
Sulphur, tons	9,177	273,635
Tin in bars, cwts	379	7,604
Wood, unmanufactured		8,569
Miscellaneous		15,371
Total, free of duty		2,678,850
Commodities subject to duty—		
Asphaltum		3,490
Beer and ale, gallons	29,439	26,049
Blacking		4,113
Books		93,108
Brass manufactures		24,598
Breadstuffs		14,940
Bricks and tiles		10,860
Buttons		59,274
Cement		8,294
Chalk, prepared		3,134
Chemicals and drugs		484,929
Clay and clay pipes		66,236
Clocks		17,580
Coal, bituminous, tons	4,414	10,882
Copper and manufacturers of		8,659
Cotton manufactures		975,848
Earthen and stoneware		302,544
Emery		2,736
Fancy goods		105,550
Fish		4,254
Flax manufactures		887,072
Fruits		1,100,728
Furs		76,067
Ginger ale		4,424
Glass and glassware		84,382
Glucose		8,583
Hair manufactures		14,462
Hemp, raw, tons	44	12,027
Honey, gallons	6,635	5,269
India rubber manufactures		6,375
Ink		15,623
Instruments, philosophical		2,504

SUMMARY STATEMENT OF IMPORTS—Continued.

ARTICLES.	Quantity.	Value.
Commodities subject to duty—		
Iron—Ore		$17,745
Pig, lbs	37,831,056	446,982
Bar	1,689,212	45,775
Old, tons	1,105	30,292
Hardware		4,756
Anchors, lbs	428,922	20,838
Machinery		84,406
Steel ingots		112,273
Other manufactures		307,121
Jewelry		48,384
Jute, raw, tons	255	17,307
Jute manufactures		11,396
Lead, bars, lbs	1,040,894	49,370
Leather and manufactures of		228,391
Marble and stone		110,141
Metal manufactures		26,038
Mineral substances		5,207
Musical instruments		21,389
Oils—Olive, gallons	8,876	18,352
Others		8,662
Oilcloth		1,785
Opium, lbs	129,869	515,454
Paintings		464,189
Paints		28,552
Paper manufactures		52,057
Percussion caps		20,868
Perfumery		18,703
Pickels and sauces		27,468
Plaster, calcined		9,028
Potatoes, bushels	20,081	13,868
Precious stones		184,856
Provisions		38,668
Salt, lbs	103,369,973	200,874
Seeds		16,538
Sheepskins, with the wool		1,569
Silk manufactures		507,816
Soap, lbs	218,479	22,932
Soda—Bicarbonate, lbs	44,800	979
Carbonate, lbs	35,994,492	602,495
Caustic, lbs	2,672,986	76,012
Spices, lbs	64,914	19,060
Sponges		5,691
Straw manufactures		2,817
Sugar, brown, lbs	66,977,108	2,494,995
Molasses, gallons	12,651,854	2,406,763
Melado, lbs	1,157,381	31,640
Tin—In plates, cwts	270,050	1,421,224
Manufactures		3,844
Tobacco—Leaf, lbs	13,172	6,698
Manufactures		87,142
Trees and plants		7,680
Umbrellas		2,425
Vegetables		30,663
Watches		13,632
Wax and manufactures		2,952
Spirits—In casks, gallons	89,471	78,885
In bottles, doz	1,966	13,017
Wine—In casks, gallons	204,162	113,104
In bottles, doz	14,585	122,881
Wood manufactures		69,461
Wool—Unmanufactured, lbs	1,007,443	193,197
Manufactures		1,699,317
Zinc, in sheets, lbs	84,891	5,263
Miscellaneous		2,432
Total		20,298,763

RECAPITULATION *of the Imports of* 1876.

COUNTRIES.	In American Vessels.	In Foreign Vessels.	Totals.
Austria	....	$36,501	$36,501
Belgium	$18,838	1,048,653	1,067,501
Brazil	....	6,206	6,206
Central American States	1,014	....	1,014
Greenland	10,773	96,249	107,022
France	....	137,068	137,068
French West Indies	15,945	168,536	184,481
Germany	34,471	279,896	314,367
England	7,676,736	3,611,065	11,287,801
Ireland	....	2,413	2,413
Nova Scotia	44,916	27,135	72,051
British West Indies	135,579	57,796	193,375
Greece	52,736	....	52,736
Hayti	22,242	3,874	26,136
Italy	570,584	614,885	1,185,469
Mexico	....	17,307	17,307
Netherlands	2,332	88,073	90,405
Dutch West Indies	2,988	....	2,988
Peru	32,903	77,916	110,819
Portugal	12,529	45,371	57,900
Spain	188,287	75,086	263,373
Cuba	3,771,021	853,649	4,624,670
Porto Rico	111,382	21,851	133,233
Sweden	....	61,744	61,744
U. S. of Columbia	4,585	4,261	8,846
Venezuela	7,207	246,130	253,337
Totals	12,717,068	7,581,695	20,298,763

STATEMENT *of Foreign Importations in Bond via New York and San Francisco into Philadelphia.*

ARTICLES.	Value.	ARTICLES.	Value.
Commodities free of duty:		Iron manufactures	$6,634
Chemicals	$3,892	Jewelry	9,705
Diamonds, rough	2,245	Lead in bars	21,312
Hides	1,270	Leather and manufactures	53,371
Paintings	1,818	Marble manufactures	1,504
Tea	5,076	Metal manufactures	1,503
Miscellaneous	610	Musical instruments	4,328
		Oils	3,235
Total free	$14,911	Paintings	4,203
		Paints	2,764
Commodities subject to duty:		Paper manufactures	1,793
Beer and ale	675	Perfumery	1,344
Books	2,132	Silk manufactures	154,980
Buttons	20,444	Straw manufactures	2,199
Chemicals	15,533	Tobacco and manufactures	52,975
Cordage	5,057	Vegetables	3,653
Cotton manufactures	77,032	Watches	4,320
Earthen and stoneware	33,143	Wax manufactures	766
Fancy goods	33,034	Wine, bottles	866
Flax manufactures	10,424	Wood manufactures	38,148
Fruits	1,578	Wool manufactures	32,646
Glass manufactures	4,394	Miscellaneous	8,827
Glucose	886		
Iron, pig	8,029	Total	638,346

STATEMENT OF MERCHANDISE

Imported via Philadelphia, in bond to the following cities:

CITIES.	Value.	CITIES.	Value.
Baltimore, Md	$1,978	New York	$10,419
Chicago, Ill	718,151	Pittsburgh, Pa	23,874
Cincinnati, O.	5,105	San Francisco, Cal	163
Cleveland, O.	2,430	St. Louis, Mo	7,989
Louisville, Ky	14,132		
Milwaukee, Wis.	3,017	Total	802,160
New Orleans, La	14,902		

STATEMENT OF DUTIES

Received at the Custom House of Philadelphia from January 1 *to December* 31, 1876.

MONTHS.	1876.	1875.
January	$627,590 38	$424,749 20
February	637,625 35	780,629 23
March	1,010,322 52	987,295 45
April	790,313 90	759,621 04
May	752,777 89	761,735 65
June	715,276 87	702,974 73
July	518,429 28	707,888 99
August	671,706 07	650,388 96
September	516,406 23	726,057 61
October	502,439 86	651,921 85
November	508,022 73	607,789 67
December	392,516 10	403,466 33
Total	7,643,427 18	8,164,518 71

IMMIGRATION.

STATEMENT OF THE NUMBER OF EMIGRANTS

From foreign countries arrived at the port of Philadelphia during the year 1876.

COUNTRIES FROM	Male.	Female.	Total.
Austria	69	44	113
Belgium	95	35	130
Brazil	6	1	7
British West Indies	3	3	6
Cuba	10		10
Denmark	36	32	68
Dominion	3	1	4
England	744	548	1,282
France	326	119	445
Germany	887	554	1,431
Greece	2	3	5
Holland	52	30	82
India	1	3	4
Ireland	338	547	885
Italy	294	51	345
Japan	1		1
Norway	621	460	1,081
Poland	10	9	19
Russia	333	290	623
Scotland	25	18	43
Spain	7	1	8
Sweden	151	123	274
Switzerland	204	97	301
Turkey	11	3	14
U. S. of Colombia	1		1
Total	4,230	2,952	7,182

DOMESTIC EXPORTS.

Statement by articles and countries, of commodities, the growth, produce and manufacture of the United States to foreign countries, from the port of Philadelphia, during the year.

ARTICLES.	Quantity.	Value.	Totals.
AUSTRIA.			
Petroleum, refined, galls	1,127,760	$218,639	
			$218,639
BELGIUM.			
Agricultural implements		1,200	
Bark		3,002	
Rye, bushels	62,679	50,143	
Wheat, bushels	1,063,144	1,316,173	
Wheat flour, bbls	13,620	71,098	
Indian corn, bushels	16,720	10,042	
Cotton, ℔s	568,218	78,755	
Cotton manufactures		8,712	
Drugs		21,851	

DOMESTIC EXPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Totals.
BELGIUM—CONTINUED.			
Feathers		$14,135	
Fruits		3,082	
Hair, unmanufactured		37,464	
Hides		60,255	
Hops, ℔s	132,720	10,808	
Iron manufactures		20,230	
Leather		451,406	
Oilcloths		5,732	
Rosin, barrels	1,280	3,000	
Petroleum, crude, galls	634,070	74,080	
Petroleum, refined, galls	15,824,079	3,142,805	
Paintings		25,700	
Paper		5,586	
Provisions		2,135,479	
Seeds		14,338	
Sewing machines		5,949	
Tallow, ℔s	700,281	66,215	
Tobacco leaf, ℔s	7,984,783	760,140	
Tobacco manufactures		19,704	
Wood—Cooperage		11,550	
Other		6,409	
Miscellaneous		11,563	
			$8,446,606
BRAZIL.			
Wheat flour, bbls	2,350	17,990	
Locomotives and machinery		445,468	
Railroad cars		11,335	
Miscellaneous		2,456	
			477,249
CHINA.			
Coal, tons	1,100	4,700	
			4,700
CHILI.			
Coal, tons	1,043	4,723	
Iron—Pig, cwt	3,620	4,175	
Nails, ℔s	100,000	3,145	
Boards		728	
Miscellaneous		98	
			12,869
DENMARK.			
Petroleum, refined, galls	1,520,047	285,076	
Miscellaneous		180	
			285,256
DANISH WEST INDIES.			
Coal, tons	357	1,267	
			1,267
FRANCE.			
Indian corn, bushels	6,600	3,861	
Oats, bushels	447,213	175,685	
Rosin, bbls	1,145	4,017	
Petroleum, crude, galls	3,301,472	378,502	
Petroleum, refined, galls	28,250	7,415	
Naphtha and benzine, galls	701,461	77,415	
Provisions		21,558	
Tallow, ℔s	3,615,224	324,000	
Cooperage		2,059	
			994,512
FRENCH WEST INDIES.			
Wheat flour, bbls	2,250	14,156	
Provisions		4,724	
Cooperage		1,206	
Miscellaneous		878	
GERMANY.			
Agricultural implements		2,150	

DOMESTIC EXPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Totals.
GERMANY—CONTINUED.			
Indian corn, bushels	145,142	$89,428	
Rye, bushels	252,266	207,086	
Drugs		900	
Iron manufactures		1,109	
Leather		3,960	
Petroleum, crude, galls	3,577,093	439,249	
Petroleum, refined, galls	20,788,178	3,812,731	
Naphtha and benzine, galls	398,686	37,420	
Provisions		80,691	
Tallow, lbs	31,250	2,969	
Cooperage		2,200	
Wood		19,515	
Miscellaneous		465	
			$4,699,873
ENGLAND.			
Agricultural implements		82,312	
Animals, living		9,150	
Bark		8,823	
Books		4,533	
Bread and breadstuffs—Indian corn, bushels	5,823,229	3,571,603	
Oats, bushels	404,734	175,070	
Wheat, bushels	235,672	318,823	
Wheat flour, bbls	51,598	258,069	
Other		3,040	
Clocks		25,143	
Coal, tons	483	2,035	
Cotton	18,038,257	2,449,182	
Cotton manufactures		62,335	
Dentists' material		5,987	
Drugs and chemicals		93,537	
Fruits		16,324	
Furs		329,230	
Hair unmanufactured		26,854	
Hides		291,441	
Honey, galls	11,393	10,305	
Hops, lbs	114,853	10,208	
Iron manufactures		105,804	
Leather and manufactured		535,165	
Oilcake, lbs	11,730,132	230,953	
Oils—Cottonseed, galls	4,240	2,212	
Petroleum, refined, galls	2,887,537	554,999	
Naphtha and benzine, galls	1,393,011	138,212	
Lard, galls	4,000	3,598	
Linseed, galls	2,000	1,968	
Residuum, bbls	6,647	25,365	
Paintings		13,785	
Paper		3,860	
Provisions		9,656,546	
Seeds		14,238	
Sewing machines		30,332	
Shells		4,325	
Molasses, galls	378,991	71,528	
Tallow, lbs	9,080,925	853,464	
Tobacco leaf, lbs	6,595,831	630,570	
Tobacco, manufactures		38,258	
Wood—Cooperage		35,102	
Other		49,763	
Wool manufactures		6,225	
Miscellaneous		12,070	
			20,772,346
SCOTLAND.			
Indian corn, bushels	204,495	137,279	
Wheat, bushels	45,985	55,182	
Wheat flour, bbls	9,661	52,215	
Other grain		2,317	

DOMESTIC EXPORTS—Continued.

ARTICLES.	Quantity.	Value.	Totals.
SCOTLAND—Continued.			
Oilcake, lbs	1,479,126	$29,300	
Provisions		2,500	
Molasses, galls	74,385	14,877	
Tallow, lbs	70,523	6,500	
			$306,170
IRELAND.			
Indian corn, bushels	10,419,187	6,516,973	
Wheat, bushels	1,314,886	1,600,507	
Petroleum, refined, bbls	1,638,708	295,812	
Naphtha and benzine, galls	717,481	80,312	
Oilcake, lbs	4,225,446	82,625	
Miscellaneous		6,796	
			8,583,125
GIBRALTAR.			
Petroleum, refined, galls	1,865,420	406,705	
Miscellaneous		561	
			407,266
NOVA SCOTIA.			
Coal, tons	16,205	72,211	
Drugs and chemicals		1,327	
Iron manufactures		19,622	
Molasses, galls	15,286	3,100	
Miscellaneous		1,299	
			97,559
BRITISH WEST INDIES.			
Bread and breadstuffs—bread and biscuit, lbs	384,448	14,995	
Indian corn, bush	61,422	42,516	
Indian corn meal, bbls	22,372	71,202	
Oats, bush	8,561	4,665	
Flour, bbls	58,103	334,849	
Other		2,133	
Candles, lbs	20,164	2,699	
Coal, tons	662	2,801	
Cotton manufactures		16,571	
Drugs and chemicals		2,513	
Fruits		1,285	
Hay, tons	43	1,033	
Iron manufactures		2,816	
Leather and manufactures		3,033	
Matches		1,278	
Oilcake, lbs	2,918,799	66,210	
Petroleum, refined, gals	56,059	13,585	
Oils, other		1,344	
Provisions		180,238	
Sugar, refined, lbs	203,406	22,901	
Tallow, lbs	7,730	1,076	
Tobacco leaf, lbs	389,658	52,830	
Tobacco manufactures		2,958	
Wood: Boards, M	241	5,015	
Cooperage		17,368	
Other		4,685	
Wool manufactures		1,265	
Miscellaneous		7,891	
			881,755
BRITISH GUIANA.			
Indian corn meal, bbls	475	1,536	
Flour, bbls	3,596	20,041	
Cotton manufactures		2,621	
Hay, tons	33	851	
Petroleum, refined, gals	3,000	600	
Provisions		13,577	
Soap, lbs	46,556	2,997	
Tobacco leaf, lbs	33,853	5,216	
Wood and manufactures		2,500	
Miscellaneous		3,067	
			53,006

DOMESTIC EXPORTS—Continued.

ARTICLES.	Quantity.	Value.	Totals.
ITALY.			
Rosin, bbls	606	$2,501	
Petroleum, refined, gals	3,984,292	862,748	
Tallow, lbs	1,002,012	90,000	
Cooperage		975	$956,224
NETHERLANDS.			
Rye, bushels	27,529	22,849	
Wheat, bushels	16,503	19,804	
Petroleum, refined, gals	3,575,982	630,174	672,827
DUTCH WEST INDIES.			
Indian corn, bush	1,405	980	
Do. . meal, bbls	1,423	4,536	
Rye flour, bbls	645	3,223	
Wheat flour, bbls	4,036	26,445	
Cotton manufactures		11,065	
Petroleum, refined, gals	5,186	1,089	
Provisions		8,854	
Sugar, refined, lbs	5,480	583	
Tobacco leaf, lbs	33,995	5,550	
Wood and manufactures		2,303	
Miscellaneous		4,183	68,811
PORTUGAL.			
Indian corn, bushels	93,133	59,421	
Rye, bushels	600	535	
Wheat, bushels	312,696	411,138	
Wheat, flour, bbls	3,282	21,035	
Rosin, bbls	3,406	11,287	
Petroleum, refined, gals	469,556	106,858	
Tallow, lbs	50,446	4,288	
Tobacco leaf, lbs	183,991	19,147	
Cooperage		20,289	
Miscellaneous		4,914	658,912
RUSSIA.			
Petroleum, refined, gals	409,213	71,241	71,241
SPAIN.			
Petroleum, refined, gals	440,858	80,767	80,767
CUBA.			
Boneblack, lbs	163,240	5,854	
Indian corn, bushels	5,800	4,091	
Wheat flour, bbls	850	5,559	
Brooms		2,675	
Carriages		2,350	
Coal, tons	27,415	110,044	
Drugs and chemicals		3,625	
Glass manufactures		1,601	
Gold coin		10,000	
Hay, tons	33	833	
Iron manufactures		88,514	
Oilcake, lbs	30,373	1,046	
Petroleum, refined, gals	30,406	4,291	
Paper		999	
Provisions		22,249	
Wood, boards, M	1,959	36,719	
Cooperage		587,163	
Other		2,779	
Miscellaneous		35,054	925,446
PORTO RICO.			
Bread, lbs	28,370	1,600	
Indian cornmeal, bbls	975	3,199	
Wheat flour, bbls	4,712	29,487	

DOMESTIC EXPORTS—CONTINUED.

ARTICLES.	Quantity.	Value.	Totals.
PORTO RICO—CONTINUED.			
Candles, lbs	30,100	$3,680	
Petroleum, refined, gals	2,500	670	
Provisions		20,313	
Soap, lbs	19,475	1,038	
Wood, boards, M	821	13,441	
Cooperage		13,795	
Miscellaneous		235	
			$87,458
SWEDEN.			
Rye, bushels	88,149	65,254	
Petroleum, refined, gals	189,849	28,000	
Miscellaneous		586	
			93,840
TURKEY.			
Petroleum, refined, gals	260,637	58,600	
			58,600
UNITED STATES OF COLOMBIA.			
Coal, tons	10,333	39,569	
Miscellaneous		2,852	
			42,421
VENEZUELA.			
Animals, living		2,610	
Bells		1,328	
Bread and breadstuffs:			
Indian corn, bushels	7,068	4,959	
Wheat flour, barrels	38,301	234,489	
Others		3,662	
Candles, lbs	23,640	3,132	
Carriages		10,780	
Coal, tons	897	3,667	
Cordage, lbs	91,254	8,976	
Copper manufactures		12,850	
Drugs and chemicals		13,185	
Iron manufactures		45,733	
Lamps		2,418	
Marble		10,502	
Rosin, bbls	480	1,505	
Ordnance stores		42,436	
Paper		28,268	
Provisions		20,356	
Sugar, refined, lbs	37,051	4,448	
Tallow, lbs	866,179	85,315	
Tobacco leaf, lbs	44,059	4,695	
Wood: Boards, M	341	6,555	
Other		15,298	
Miscellaneous		5,424	
			572,591
Total			$50,552,300

SUMMARY STATEMENT OF COMMODITIES.

The growth, produce and manufacture of the United States, exported to foreign countries from the port of Philadelphia during the year 1876 :

ARTICLES.	Quantity.	Value.
Agricultural implements		$86,666
Animals, living		9,810
Bark		12,004

SUMMARY—CONTINUED.

ARTICLES.	Quantity.	Value.
Beer and ale		$1,021
Bells		1,328
Boneblack, lbs	164,360	5,895
Books		6,184
Bread and breadstuffs: Bread and biscuit, lbs	420,683	17,051
Indian corn, bushels	16,790,691	10,448,938
Indian meal, barrels	25,510	81,096
Oats, bushels	861,176	355,783
Rye, bushels	431,223	345,867
Rye flour, barrels	766	3,804
Wheat, bushels	2,989,704	3,720,827
Wheat flour, barrels	192,433	1,295,919
Other breadstuffs		9,479
Brooms		2,873
Candles, lbs	78,954	10,158
Carriages and carts		13,590
Cars, railroad		12,585
Clocks		25,250
Coal, tons	58,188	242,196
Copper manufactures		12,850
Cordage, lbs	99,424	10,059
Cotton, unmanufactured, lbs	18,615,475	2,527,937
Cotton manufactures		102,230
Dentists' material		6,163
Drugs and chemicals		132,438
Dyestuffs		11,169
Earthen and stoneware		1,301
Feathers		13,609
Fruits		21,148
Furs		529,230
Glass		2,984
Gold and silver coin		10,925
Jewelry		6,242
Hair, unmanufactured		64,318
Hay, tons	110	2,795
Hides		351,917
Honey, gallons	11,393	10,305
Hops, lbs	245,034	21,104
Iron: Pig, cwt	4,620	5,365
Railroad bars, cwt	5,263	15,573
Car wheels, Nos	2,120	85,652
Steam engines, Nos	27	380,200
Machinery		172,580
Nails, lbs	254,350	8,892
Other manufactures		106,650
Lamps		2,615
Leather and manufactures		994,818
Marble and stone manufactures		11,661
Matches		1,278
Molasses, gallons	468,862	89,560
Naval stores: Rosin and tar, barrels	7,178	22,967
Oil cake, lbs	20,383,876	408,124
Oil cloths		5,734
Oils: Petroleum, crude, gallons	7,512,635	801,831
Petroleum, refined, gallons	55,107,836	10,583,116
Naptha and benzine, gallons	3,211,139	333,430
Residuum, barrels	6,657	25,407
Cottonseed, gallons	4,240	2,212
Lard, gallons	5,265	4,803
Other		9,420
Ordnance stores		22,442
Paintings		39,581
Paper and stationery		39,595
Perfumery		1,605
Printing material		1,097
Provisions: Bacon and hams, lbs	71,556,034	8,891,007
Beef, lbs	4,831,409	358,448
Butter, lbs	796,221	157,456

SUMMARY—CONTINUED.

ARTICLES.	Quantity.	Value.
Provisions: Cheese, lbs	1,696,189	$213,991
Fish		220,663
Lard, lbs	14,336,924	2,019,662
Pork, lbs	1,069,567	104,267
Vegetables		9,459
Other		1,243
Seeds		28,843
Sewing machines		36,461
Shells		4,325
Soap, lbs	107,365	6,233
Sugar, refined, lbs	251,646	28,485
Tallow, lbs	15,429,754	1,434,381
Tobacco leaf, lbs	15,269,163	1,478,256
Tobacco manufactures		60,200
Wax, lbs	4,756	1,088
Wearing apparel		2,246
Wood: Boards, M.	3,536	65,956
Cooperage		497,383
Other manufactures		99,698
Wool manufactures		7,895
Miscellaneous		11,249
Total		50,552,300

RECAPITULATION.

Statement of the value of exports to the following foreign countries:

COUNTRIES.	In American vessels.	In foreign vessels.	Total.
Austria	$56,333	$162,306	$218,639
Belgium	460,062	7,986,544	8,446,606
Brazil	458,475	18,774	477,249
Chili	12,869		12,869
China	4,700		4,700
Denmark		285,256	285,256
Danish West Indies	1,267		1,267
France	421,739	572,773	994,512
French West Indies	9,295	11,669	20,964
Germany	548,733	4,151,140	4,699,873
England	10,422,629	10,349,717	20,772,346
Scotland	14,877	291,293	306,170
Ireland	214,756	8,368,369	8,583,125
Gibraltar	140,160	267,106	407,266
Dominion of Canada	41,806	55,753	97,559
British West Indies	735,699	146,056	881,755
British Guinea	35,260	17,746	53,006
Italy	672,833	283,391	956,224
Netherlands	74,404	598,423	672,827
Dutch West Indies	36,226	32,585	68,811
Portugal	192,836	466,076	658,912
Russia		71,241	71,241
Spain	37,100	43,667	80,767
Cuba	863,947	61,499	925,446
Porto Rico	64,245	23,213	87,458
Sweden		93,840	93,840
Turkey	27,400	31,200	58,600
U. S. of Colombia	30,749	11,672	42,421
Venezuela	476,830	95,761	572,591
Total	16,055,230	34,497,070	50,552,300
Total exports during the year 1875	12,289,114	19,647,613	31,936,727
Increase of 1876 over 1875	3,766,116	14,849,457	18,615,573

Special Statement of the Export of Breadstuffs.

Including bread and biscuits, Indian corn, Indian corn meal, oats, rye, rye flour, wheat, wheat flour and other grains, and provisions including bacon, hams, beef, butter, cheese, fish, lard, meats, oysters, pork and vegetables from the port of Philadelphia during the year 1876.

COUNTRIES.	Breadstuffs.	Provisions.
Belgium	$1,447,456	$2,135,479
France	209,546	71,578
French West Indies	14,592	4,724
Germany	296,514	80,691
England	4,256,615	9,656,546
Scotland	232,293	2,500
Ireland	8,124,376	
Gibralter		211
Dominion of Canada		833
British West Indies	474,859	180,238
British Guiana	21,745	13,577
Netherlands	42,653	
Dutch West Indies	35,541	8,854
Portugal	495,759	
Cuba	10,043	22,249
Porto Rico	24,444	20,313
Sweden	65,272	
United States of Colombia	393	
Venezuela	243,114	20,356
Total	15,995,215	12,218,149
Exports during the year 1875	9,120,360	6,350,558
Increase of 1876 over 1875	6,874,855	5,867,591

Special Statement of the Export of Petroleum.

From the port of Philadelphia to foreign ports during the year 1876.

COUNTRIES.	Crude.		Refined.		Naph. & Benzine.	
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.
Austria			1,127,760	$218,639		
Belgium	634,070	$74,080	15,824,079	3,142,805		
Denmark			1,520,047	285,076		
France	3,301,472	378,502	28,250	7,415	701,461	$77,415
French West Indies,			205	85		
Germany	3,577,093	439,249	20,788,178	3,812,731	398,686	37,420
England			2,887,537	554,999	1,393,011	138,212
Ireland			1,638,708	295,812	717,481	80,312
Gibraltar			1,865,420	406,705		
Nova Scotia			92	20		
British West Indies,			56,059	13,585		
British Guiana			3,000	600		
Italy			3,984,292	862,748		
Netherlands			3,575,982	630,174		
Dutch West Indies,			5,186	1,089		
Portugal			469,556	106,858	500	71
Russia			409,213	71,241		
Spain			448,458	80,767		
Cuba			30,406	4,291		
Porto Rico			2,500	670		
Sweden			189,849	28,000		
Turkey			260,637	58,600		
Venezuela			22	5		
Total	7,512,635	891,831	55,107,836	10,583,115	3,211,139	333,430

Total Exports of Petroleum, Naphtha and Benzine.

	1876.		1875.	
	Gallons.	Dollars.	Gallons.	Dollars.
Crude	7,512,635	891,831	6,497,845	591,731
Refined	55,107,836	10,583,115	55,112,341	7,107,749
Naphtha and Benzine	3,211,139	333,430	2,494,114	227,919
Total	65,831,610	11,808,376	64,104,300	7,927,399

IMPORTS AND EXPORTS OF PHILADELPHIA FOR THE YEARS 1821 TO 1876 INCLUSIVE.

	Exports.	Imports.		Exports.	Imports.
1821	$7,392,217	$8,158,922	1849	$5,343,421	$10,645,500
1822	9,047,802	11,874,170	1850	4,501,606	12,066,154
1823	9,617,162	13,696,770	1851	5,356,036	14,168,761
1824	9,364,893	11,865,531	1852	5,828,571	14,785,917
1825	11,269,981	15,041,797	1853	6,527,996	18,834,410
1826	8,331,722	13,551,779	1854	10,104,416	21,369,306
1827	8,575,833	11,212,935	1855	6,274,338	15,309,935
1828	6,051,480	12,884,408	1856	7,144,488	16,585,685
1829	4,090,025	10,100,152	1857	7,135,156	17,850,630
1830	4,291,793	8,702,122	1858	5,987,251	12,890,369
1831	5,513,713	12,124,083	1859	5,298,095	15,603,769
1832	3,516,066	10,678,358	1860	7,839,286	14,531,352
1833	4,078,951	10,451,250	1861	10,277,938	8,094,161
1834	3,989,746	10,479,268	1862	11,518,970	8,327,976
1835	3,739,275	12,389,937	1863	10,628,968	6,269,530
1836	3,971,555	15,068,233	1864	13,664,862	9,135,685
1837	3,841,599	11,680,111	1865	12,582,152	5,645,755
1838	3,477,151	6,360,371	1866	17,867,716	7,321,231
1839	5,299,415	15,050,715	1867	14,442,398	14,071,765
1840	6,820,145	8,464,882	1868	15,706,445	14,218,368
1841	5,152,501	10,346,698	1869	15,872,249	16,414,535
1842	3,770,727	7,385,858	1870	16,694,478	14,952,371
1843	2,354,948	2,760,630	1871	20,688,551	20,820,374
1844	3,535,256	7,217,267	1872	20,484,803	26,824,333
1845	3,574,363	8,159,227	1873	29,633,186	29,186,925
1846	4,751,005	7,989,396	1874	29,878,911	25,004,784
1847	8,544,391	9,587,516	1875	31,936,727	24,011,014
1848	5,732,333	11,147,584	1876	50,552,300	20,298,763

THE SHIPPING TRADE OF PHILADELPHIA.

Dependent as is much of the commerce of Philadelphia upon a commensurate supply of tonnage, the shipping trade of the port naturally forms one of its most important interests, and in referring to the very gratifying increase which has taken place in this branch of business during the past twelve months, a word or two first on the advantages which Philadelphia offers both to shipper and ship owner may not be out of place.

The port of Philadelphia, as defined by the board of port wardens, extends from Marcus Hook to Bristol, on the Delaware river, and on the Schuylkill river, from its mouth to the dam at Fairmount water works, giving an available water front of about twenty-five miles, the principal points on which are all nearly equidistant from the centre of the city. There is sufficient depth of water in both rivers to permit of the largest tonnage lying afloat at all times, with excellent and ample wharf accommodation, on which are situated grain elevators, coal shutes, warehouses and storage yards; while from Wilmington upward are numerous ship-yards, marine railways and dry-docks, where the charges are as reasonable and the workmanship as good as can be had in America.

Running almost parallel with the water front, and in immediate connection with the surrounding grain elevators, warehouses, etc., are numerous branch lines of the great trunk lines of railroads of which Philadelphia is the tide water terminus, and its nearer proximity to the western grain fields, Pennsylvania oil and coal regions, and the south-western cotton and tobacco States, makes the port the shortest, cheapest and best channel through which the enormous imports and exports of the west, north-west and south-west can pass. The saving effected in the cost of inland transportation consequent on her geographical position, while reducing the seaboard value of the chief articles of American export to a minimum, at the same time enables Philadelphia to generally pay higher rates of ocean freight than can be obtained at any other port on the Atlantic seaboard, and ship owners and ship masters do not fail to recognize the fact that the highest freights are invariably secured at the cheapest port of purchase. Appreciating moreover the necessity for a large and continuous supply of tonnage, the commercial community of Philadelphia have not rested content with the mere ability to compete with other cities in rates of freight, but by a thorough revision of its port charges have unquestionably made Philadelphia the cheapest and best port to a ship owner in America.

The statistics of the past few years bear ample proof to the increasing estimation in which these advantages are held, both in the way of a largely increased volume of export and import business, as also in the shape of considerable and annual additions to the tonnage frequenting our waters, and at no time has this been more marked than during the twelve months just ended. For this period the arrivals from foreign ports have been 1,457 vessels of 922,290 tons, against 1,126 vessels of 671,771 tons in 1875, representing a gain in 1876 of 371 vessels and 250,519 tons register, the increase being mainly in the number of foreign steamers and the larger class of sailing vessels; 29 steamers, 14 ships and 313 barks more having entered the port during 1876, than in any previous year. In the coasting trade, however, a considerable decline is noticeable in the arrival of sailing vessels; but as this traffic is being gradually monopolized by steamers of large tonnage, the decrease is more apparent than real. As indicative also of the general activity of the port it is satisfactory to note the successful establishment of regular lines of sailing packets to San Francisco and Liverpool, while the recent transfer of the steamers of the Dominion line to Philadelphia, still further increases our means of communication with the chief port of England.

In thus briefly alluding to the progress of the port during the past year a word is due to the Philadelphia Maritime Exchange, whose exertions have so largely assisted in promoting the maritime interests of the city. The Exchange was organized in February, 1875, for the purpose of securing a more convenient, intelligent and harmonious transaction of maritime business, as also with the view of bringing before the shipping community generally the many advantages of Philadelphia as a port of entry, and of Delaware Breakwater as a port of call. A permanent place of meeting now known as the Philadelphia Maritime Exchange was opened to the public on the first of April, 1875, at No. 131 South Second street, and has since been in successful operation, although its sphere of action might be considerably enlarged did it but receive that general support from the community to which it is fairly entitled. Although barely a year in existence, the result of its labors is unmistakably apparent. Our exports, the extent of which is entirely dependent on the supply of tonnage, have increased in value from $31,936,727 in 1875 to $50,552,300 in 1876, while the number of vessels calling at Delaware Breakwater during any two months of 1876 has been fully as great as during the whole of any previous year. As a port of call for vessels seeking employment in American waters, this latter point offers unequalled advantages both from its central position with regard to the chief ports on the coast, and the large range of freght markets thus secured, as well as from its accessibility, being in the immediate course of vessels bound either north or south, or from Europe seeking a market. For facility of communication with all parts of the world the harbor is unexcelled, the Western Union telegraph company having erected an office on the Breakwater itself, for the special purpose of securing the quick dispatch and prompt delivery of messages entrusted to their care. Any cables or telegrams addressed merely with vessel's name are at once delivered to the captain, and masters of vessels calling at Delaware Breakwater can receive or obtain information from any point without leaving their ships. The government has built a magnificent iron pier, 1,500 feet long, (to be still further increased,) extending into deep water, and communication can be had with the shore at all times, either by boat or use of the International Code of Signals. The agent of the Philadelphia Maritime Exchange, who resides on Delaware Breakwater, reports without charge all arrivals and departures, and this information is distributed to the chief maritime cities of America and Europe. There are no port or custom-house charges at Delaware Breakwater, the harbor being entirely free to all nationalities, nor are vessels taking a pilot inward and afterward leaving for other ports subject to outward pilotage, as is frequently the case elsewhere.

CLEARANCES OF VESSELS.

The following is a statement of their nationality, value of cargo and tonnage:

NATIONALITY.	Number	Tonnage	Value of cargo
American	495	260,918	$16,055,230
Argentine Republic	1	453	....
Austrian	76	46,606	1,867,607
Belgian	19	46,480	4,272,818
British	389	300,040	16,618,850
Danish	12	4,373	125,220
Dutch	4	1,117	58,685
German	81	52,801	2,582,151
Grecian	1	566	40,817
Italian	175	101,429	3,899,314
Portuguese	10	4,639	293,139
Russian	26	16,925	752,552
Spanish	6	2,802	104,440
Swedish	162	83,141	3,881,477
Total	1,457	922,290	50,552,300

NATIONALITY OF VESSELS

Entered into the port of Philadelphia during the year 1876 :

NATIONALITY.	Number.........	Tonnage.........
American	542	266,516
Argentine Republic	1	453
Austrian	72	46,182
Belgian	17	44,381
British	385	295,075
Danish	13	4,781
Dutch	4	1,175
French	5	21,419
German	81	54,049
Haytian	1	249
Italian	182	108,458
Portuguese	10	4,439
Russian	25	16,417
Spanish	6	2,802
Swedish	162	84,047
Total	1,506	950,443

Entrances and clearances of vessels from the port of Philadelphia, in the coastwise trade, during the year 1876 :

MONTHS.	Entered.		Cleared.	
	No.	Tonnage.	No.	Tonnage.
January	72	39,745	86	52,595
February	67	39,245	77	49,760
March	62	32,050	108	57,408
April	116	41,245	155	66,481
May	121	46,866	146	64,564
June	115	47,643	171	73,115
July	121	49,205	150	66,758
August	127	45,724	150	65,458
September	107	38,880	136	65,645
October	140	54,484	136	62,386
November	147	54,758	146	69,585
December	74	38,567	88	54,560
Total	1,269	528,412	1,549	748,315

PHILADELPHIA INDUSTRIES.

A short time ago, the *North American* published an elaborate article reviewing the leading industries of Philadelphia, for the year 1876. Considerable care was given in its preparation, and from the well known character of the publication, the statements may be considered reliable. We herewith append extracts from the article:

GRAIN.

The grain business of Philadelphia shows a larger increase during the past year than any other trade. The receipts of all kinds of grain in 1875, were 17,743,230 bushels, and in 1876, 31,687,725 bushels, showing an increase in one year of 13,944,495 bushels. The increasing facilities for the handling of grain at this port, in connection with the American, Red Star and Dominion line of steamships, is bound to make Philadelphia a prominent shipping point for grain. In storage facilities our city has no rival on this continent, the port being well protected, possessing deep water all the year round, and the two river fronts being liberally provided with elevators and warehouses for the storage and shipment of all kinds of merchandise. No charges are made here for loading grain into the vessels from the elevators, nor for wharfage, and towing is cheaper than at any other port in the United States, owing, in a measure, to the low price of coal. Philadelphia, as a distributive centre enjoys unrivalled facilities of communication with the interior of the country, in her magnificent network of railroads centering here, and from her wharves the wealth of the continent in grain, cotton, coal, iron, provisions, petroleum, and a thousand other articles find their outlet.

Wheat.--The receipts of wheat during the past year show a slight falling off, owing in a great measure to the scarcity of direct orders from Europe. The quality generally has been very good, particularly the Pennsylvania and Southern red and amber wheat, which is a great favorite in our market; Western Nos. 1 and 2 red was also of very good quality during the past year, and our trade in the wheat of the great west has been increasing gradually for several years past. Prices generally have been steady. Pennsylvania red opened and sold, in January, 1876, at $1 36@$1 38; Pennsylvania amber at $1 40@$1 41; closing in December, 1876, at $1 40@ $1 43 for the former, and $1 46@$1 47 for the latter. The highest price reached was in April and May; Southern red and amber wheat ruled at about the same prices. No. 1 Western red wheat opened in January, 1876, at $1 34@$1 35, and Western amber at $1 37@$1 39, closing in December, 1876, at $1 37@$1 39 for the former and $1 41@$1 43 for the latter. The highest point reached was in April and May, when No. 1 Western red sold at $1 42@$1 43, and amber sold at $1 45@$1 46 ℘ bushel. The American crop of wheat for 1876, is estimated at 245,000,000 bushels.

Receipts of wheat at this port for the year 1876:

	Bushels.		Bushels.
January	210,800	July	256,800
February	272,200	August	353,900
March	490,800	September	527,900
April	495,000	October	440,100
May	499,700	November	264,200
June	519,900	December	153,700
Total			4,485,000

Receipts of wheat at Philadelphia for the past three years:

1875	5,550,800	1873	4,372,800
1874	5,471,700		

Corn may now be said to stand first in importance on the list of our cereal crops. It does not, of course, compare with wheat as an article of human food, but then it is the basis of our immense hog crop, and for general stock feeding purposes it is conceded to have no equal. Being a much more reliable crop than wheat, and yielding a better return for the cost of culture, it is natural that it should be more in favor with the average farmer of the west than any other cereal. Its exportation to Europe in considerable quantities commenced about the year 1847 or 1848, or during the famine in Ireland. It was at first used there chiefly for stock feeding purposes, but more recently it has been largely consumed as human food, its exportation from the United States during the past harvest year greatly exceeding that of wheat, the quantity closely approximating 50,000,000 bushels. While the great bulk of the exports find their way to the United Kingdom, it is worthy of note that the consumption of corn on the Continent is steadily on the increase, notably in Portugal and the north of Europe. During the last year numerous cargoes have been purchased for Italy, understood chiefly for distilling purposes. A few years ago large shipments of alcohol were made to Italy and other countries bordering on the Mediterranean; but it having been ascertained that corn can be laid down there and converted into spirit at a relatively smaller cost than alcohol, the Italians naturally prefer the grain to the spirit. Henceforth corn must stand first on the list of cereals exported, as it has long occupied the first place in the food staples consumed at home. The receipts during the past year were the largest ever known in this city in one year, reaching 20,261,675 bushels, an increase of 13,131,675 bushels over 1875. Prices have been steady. Pennsylvania and southern yellow sold in January, 1876, at 58@61c and closed in December, 1876, at 60@61c. The highest point reached during the year was in April, when sales were made at 63@64c. per bushel; western mixed sale opened at 57@58c, and closed at 58@59c. The highest point was in April, when sales were made at 62@63c. per bushel. The crop of corn for 1876 will not be far from 1,200,000,000 bushels.

Receipts of corn at this port for the year 1876:

	Bushels.		Bushels.
January	1,244,800	July	1,538,000
February	1,291,700	August	2,250,700
March	1,162,500	September	1,295,300
April	1,332,000	October	1,467,575
May	2,666,200	November	1,112,300
June	3,481,400	December	1,419,200
Total			20,261,675

Receipts of corn at Philadelphia for the past three years:

1875	7,130,000	1873	8,233,400
1874	5,954,700		

Oats.—The receipts during the past year were quite large, reaching 4,484,000 bushels, against 3,820,400 bushels in 1875, an increase of 663,600 bushels. Prices have ruled low, opening in January, 1876, at 48@50 cents for prime white and closing in December at 40@42 cents. The lowest point reached was in October, when prime white sold at 37@40 cents, and the highest point in April and May, with sales at 49@50 cents per bushel. According to the return of the Agricultural Report the oats crop of 1876 shows a falling off of 23 per cent. compared with 1875. Every section of the Union is deficient.

Receipts of oats at Philadelphia for the past four years:

1876	4,484,000	1874	4,705,000
1875	3,820,400	1873	5,980,565

Rye.—The receipts during the past year were larger than they have been for many years, reaching 679,100 bushels, against 187,550 bushels in 1875, an increase of 491,550 bushels. Prices have taken quite a wide range. Pennsylvania rye opened in January, 1876, at 82@83 cents ⅌ bushel, and closed in December at 80@82 cents. The highest price during the year was reached May and June, when sales were made at 87@88 cents, and the lowest price in November, being 60@62 cents ⅌ bushel. According to the return of the Agricultural Report, the rye crop of 1876 is reported 4 per cent. less than that of 1875, but in quality it is better.

Receipts of rye at Philadelphia for the past four years:

1876	679,100	1874	210,191
1875	187,550	1873	270,600

Barley brewing was commenced in Philadelphia very soon after its first settlement, and the high grade of the early product has always been maintained. The brewing of lager, though commenced at a comparatively late period, has so rapidly increased that it largely exceeds that of ale and porter. To supply this trade large quantities of malt, and of the choicest quality, are needed, to obtain which the finest barley of the best barley producing regions of the continent is in constant demand, and our city is a favorite market for such grain. Barley is exclusively used for malting in this market, and only during the malting season, and the average amount used is about 1,000,000 bushels. For its cereal year opening with August and July last—1875–'6—the receipts exceeded 1,500,000. To January 1 this season, the receipts were 791,200 bushels, against 962,000 the same time last year. The year closed with a quiet but steady market, two-rowed New York State ranging from 68@71 cents; four-rowed, at 75@85 cents, and Canada at 80c@$1 18 ℔ bushel, as to quality.

Malt.—Whilst our brewers prefer the product of their own manufacture or of the local malt-houses, there is all the time some trade being done in the product of Canadian, northern and western malt-houses. The year closed with a quiet market, two-rowed New York ranging from 75@90 cents; four-rowed, at 80c.@$1 05, and Canadian at 90c.@$1 25 ℔ bushel, according to quality.

IRON.

The production of pig iron during 1876, has been less than for the past three years, and the year closes with a light stock in first hands. The trade generally has been dull and steady. There has been little or no speculation, and the sales have mostly been in small lots to supply the immediate wants of the trade. Firmness in prices has occurred several times after a decline, as though the trade had resolved that the weakness should go no further. Prices have gradually settled down during the year, about $2 25 per ton. The quotations in January last for No. 1, were about $23 25, from which figure it has declined to $21, the average quotation at the close of the year.

Manufactured iron has been very dull throughout the year, but more especially so during the past four months, and prices of most kinds have declined 9@10 per cent. The demand has been very light, and the sales have been in small lots only to supply immediate wants.

Steel rails have been quite active during the past year, but prices have declined about $20 per ton. Sales were made in January, 1876, at $67@$67 50 per ton, and to-day the nominal quotation is $50. The mills are all reported fairly employed on orders for future delivery, and prices are said to be almost down to the cost of production.

Iron rails have been very dull, and prices have steadily declined about $7 per ton, the principal cause for the depression in iron rails being the very low price for steel.

Bar iron trade has been in a very unsatisfactory condition. The mills have for some time been selling direct to consumers, and the decline in prices has been about $4 50 per ton during the year.

The English trade journals during the past year have been deploring the extraordinary decline in the exportation of railway iron to the United

States, and express the belief that the trade can never be recovered. The extent of the loss may be inferred from the statement of the London Mining Journal, that this country, formerly the best customer of the English iron-masters, "only took 19 tons in October, 1876, as compared with 86 tons in October, 1875, and 6,172 tons in October, 1874. Such a tremendous decline in so short a period can probably be scarcely paralleled in any branch of our manufacturing industry; and the worst feature about the matter is that, although some improvement is noticeable in the position of the American railroad interest—and it is certainly high time that such an improvement should be witnessed, since from September, 1873, American railroads have suffered severe depression—it has brought with it no increase in the consumption of our railway iron among the Americans." The same journal also says that the exports of British rails to this country "have shrivelled up most miserably this year, having only amounted to October 31st to 213 tons, against 17,711 tons in the corresponding period of 1875, and 91,626 tons in the corresponding period of 1874. The Great Republic will at this rate soon cease to take any of our rails at all. It is tolerably clear that in the matter of rails our iron-masters practically find their occupation gone among the Americans, and that they have little prospect of recovering it."

WOOLLEN MANUFACTURES.

The condition of woollen manufactures in Philadelphia for 1876 has been exceptionally favorable on the whole, including in this statement the worsted manufacture. Within the last fifteen years a remarkable change has occurred in the substitution of worsted for plain or uncombed wool, the result being the production of finer, stronger and more durable fabrics, as well as a higher value for the weight of wool used. This prominence of worsted over felt cloths is shown in the present very large use of worsted coatings, the best known to use in any country having been made here since 1870. Worsted dress goods, alpacas, mohairs and a great variety of forms varying with the changes of fashion, are next to coatings in value, perhaps are the largest in value. Both have been made more largely and of better quality in Philadelphia in 1876 than in any former year. The singular excellence of these fabrics attracted the attention of many foreign visitors during the Centennial. The productions of these may be estimated at about $3,000,000 in value of each class, of pure worsted or worsted with cotton alone. The same mills, eight or ten in number, made of uncombed woollens in cloths or dress goods nearly as much more, or say ten millions in the aggregate. A number of our large establishments have been fully employed to the end of the year, and are likely to continue so the coming year. The great advantage these establishments possess over those of the eastern cities is in the greater economy of working them, the absence of costly agents, and in the personal ownership of mills, lands and machinery, as contrasted with the high value at which all these are capitalized in corporate establishments. The slight turn of prices for the better, which occurred in September, found all these mills active, even under the extreme depression then existing, and since that time there has been some further positive gain, with a fair promise for continued activity.

Even greater activity has attended the worsted spinning interest, or the mills engaged solely in the making of worsted yarns. Of these there are five or six very large. Several of the mills making broad goods also comb wool; and altogether there are about one hundred and twenty combs of the first class engaged: First, on fine yarns, two-thirds of which are sent east; second, on heavier yarns consumed here in coatings, braids and knit goods; and thirdly, on carpet yarns. Combing for carpet yarns has become a large business. The business in worsted spinning of the finer classes was at least ten millions in value for 1876, and continued active throughout. Carpet and hosiery worsted were at least $1,500,000 more—all these being consumed in this city. Worsted braids have attained to a large production, there being two or three large mills, and at least 2,000 braid looms. This industry has been fairly active through the year, and promises well for the future. The fancy hosiery or knit woollens made of partially drawn worsted which constituted so large a feature some years since, especially in Germantown, is still large, though not increased in the special lines then so much in favor. Many of the mills are now chiefly engaged with regular worsted machinery on dress goods and coatings. The manufacture of scarfs, operas, &c., is still large, and the Germantown worsted has become as much celebrated as the Berlin ever was, entirely superseding the latter in the American market. Shawls are also very largely made, both of full worsted and knit; and also every form of woollen or worsted woven shawls. From the fancy scarf and knit shawl the transition has been easy to the finest woolen and worsted, the Paisley and other Scotch and English shawls being successfully replaced by better and cheaper articles of the same general qualities. The shawl manufacture has been somewhat variable through the caprices of fashion, but a return to their use is anticipated. One peculiarity of the manufacture of goods of this class here has been the easy adaption of mills to goods demanded by the trade; no instances of material loss or delay have occurred in making any change from one class to another.

The change from fancy woollens has in many cases been made to hosiery proper, knit jackets and other productions of regular knitting machines. These machines have been greatly improved, and their production in semi-worsted, reaches two and a half to three millions, while on cotton hosiery distinctively, there is even more machinery employed. Woollen hosiery has always had a secure footing among the fixed industries of Philadelphia, and it is now as well sustained as at any previous time.

Still another class of woollens or mixed goods is made in mills usually running on goods all cotton, the wool being carded and spun with cotton, or cotton alone being carded and spun by woollen machinery. Linseys, flannels, coverlets, balmorals, skirtings, some varieties of dress goods, and many other classes are made at these works. The production of coverlets, woollen and mixed, is very large ; of skirtings still larger, and altogether this flourishing class of manufactures has never been greater than it is now. In fulled or felted cloths, the mills first mentioned above, make a large stock of cassimeres, coatings and ordinary men's cloths, still more of which are made near the city in mills owned here. Blankets are standard products of two or three celebrated mills. Carriage robes, superior to any imported, plush and velvet-faced goods of all qualities, and furniture reps and terry, not inferior to the best French, have become standard products.

TOBACCO.

The magnitude of the trade done in tobacco in this city can be fully appreciated when one knows that there are about seven thousand three hundred dealers in the manufactured articles, and all seem to live as well as tradesmen in other lines. Consumption, of course, is very great, but within the past few years Philadelphia has become the mart for numerous surrounding cities, in consequence of the superior quality of domestic segars turned out by her manufacturers. This city is so well known for its qualities in this respect that she carries almost the entire trade in segars made from eastern and Pennsylvania leaf. There are eleven houses doing a commission business in chewing tobacco, ten houses are engaged in the leaf tobacco trade, and ten are also doing a commission business in leaf and segars. The increase of sales for segars from the Lancaster and York counties tobacco has been a source of great surprise and satisfaction to those dealers who never were sanguine of the success of domestic goods, and now they find New York, Boston and the entire west looking to this market for the domestic segar. Philadelphia is also a very good customer to outside establishments, and does principally a large trade in Louisville tobacco. In the matter of segars it may be an interesting point to know that the imported brands are rapidly making way for the domestic, the principal substitute being the Key West segar, which has been found to contain many of the qualities of a pure Havana segar, and can be purchased at an infinitely smaller price. The seed and Havana segars which are manufactured in New York and Philadelphia are also rapidly gaining prestige over the imported brand. The year just closed has proved quite as unsatisfactory to the leaf dealers as was anticipated at the beginning. A poor crop is always a dangerous one to handle, and the danger is not lessened by a poor crop being also a large one.

The crop of 1875 was not only a decidedly low average in quality, but also a high average in quantity, and all classes who have touched it, except as mere agents or forwarders, have lost on it. The yield proved larger than was generally estimated by the trade, and at least three-fourths was nondescript and inferior—thin, without gum and substance, and a considerable proportion house-burnt. Country buyers, as the event has abundantly proved, paid too much for tobacco, but being confident of their profits they held with firmness, and for a time aided materially in bolstering up the market. In the spring, moreover, a brisk speculative movement set in, based on the prospect of the planting being curtailed, which resulted in a marked advance in medium to good grades, especially those of weight and body. The result was to concentrate the moving supply more largely under speculative control and interrupt the regular course of trade. In the end the buyers lost money, though the origin of the speculation was not without justification in fact, as the season was unusually propitious until after midsummer, while a smaller acreage was planted than usual. Some of the spring buyers of leaf lost $30 to $40 per hogshead. They were not alone, however, as every other class of operators who carried tobacco for any considerable period had a greater or less balance left to the debit side of their profit and loss account. During 1876 there was a gradual decline in the business, which of course, was owing to the unsettled condition of the country, but the falling off is not to such an extent as would create any bad impression of the Philadelphia market. The year opened much better than it closed, the business continuing from the first of January to the last of April in the same prosperous condition it had been in 1875. Strange to say, the trade did not derive that benefit from the Exhibition it was expected it would. There was an influence working against the trade, from the fact that the merchants who were expected to buy large quantities of goods here made limited purchases, contrary to the expectation of the trade generally. At the close of the year business was very dull. The capital engaged in the tobacco trade of this city will reach about $2,000,000, the value of the product and the material used will annually aggregate between $7,000,000 and $8,000,000. According to the United States census reports the total yield of tobacco in all the States was 219,139,000 pounds in 1840, 199,752,000 pounds in 1850, 434,209,000 pounds in 1860, and 262,735,000 pounds in 1870. Since the latter date there are no general official reports.

The average production of tobacco on the four quarters of the earth was estimated as follows in 1868:

	Pounds.		Pounds.
United States	248,280,000	Asia	399,900,000
Europe	281,344,500	Africa	24,300,000

The crop of the United States has greatly increased since the date referred to, but we do not know definitely to what extent other nations have followed our rate of progress.

The following are estimates of production of different countries between 1870 and 1873:

	Pounds.		Pounds.
German Empire	78,701,000	Porto Rico	21,000,000
Austria-Hungary	103,000,000	San Domingo	8,960,000
Turkey	43,000,000	France	45,844,000
Cuba	*11,445,000	Russia in Europe	30,000,000
Philippine Island	22,000,000	Russia in Asia	85,000,000
Japan	*4,847,000	East India	*3,262,000
China	*12,000,000	Australia	*3,500,000
Java	33,000,000	Persia	*4,165,000
South America	46,000,000	Ceylon	4,256,000
Africa	30,000,000	Switzerland	2,200,000

The tobacco grown in other countries is, with slight exceptions, consumed at home, and none can be spared for competition in outside markets with the American staple. As is well known, the West Indies export rather liberally, and there is also a regular, but limited, export from certain South American States, Germany and one or two Asiatic nations. It is claimed, but without satisfactory trial and proof, however, that these foreign tobaccos are an important ally of the foreign dealer and consumer in controlling the occasional "vaulting ambition" of American markets; that, in seasons of unreasonably high prices on this side, the four quarters of the earth can be drawn into competition by a slight advance, for instance, in the Liverpool bids. It is a questionable proposition, we infer from rather recent observations, except in a conjunction of circumstances which would raise the presumption that tobacco would be scarce and high in America for a long period, and would stimulate foreign cultivation. At all events, we trust that no occasion will soon be given for bringing the question to practical proof.

PETROLEUM.

Petroleum for the last ten years has been one of our most important trades, and we are pleased to notice an increase in the receipts during the past year. The receipts of crude and refined during the year 1876 were 1,486,972 barrels, against 1,446,439 barrels in 1875. The year opened with quite an active market, refined selling at 13½@13⅞c., which was the lowest point during 1876. The market continued moderately active during the spring and summer, and prices were gradually advancing, closing 90 @100 ⅌ cent. higher than in January, 1876. There are about fifteen

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* Exports.

firms engaged in the petroleum trade in this city, with a capital of about $2,500,000; in fact, we might name all the exporters in New York as connected with the trade here, they being the main buyers in this market. A consideration of the facts which have led to the present high prices necessitates a look into the cause, and consumption shall claim the first attention. The amount required by the trade during the past year, if based upon preceding years, did not fall short of 32,000 barrels per day. During 1875 the shipments by the various railroads leading from the region averaged 28,000 barrels daily. Of this amount the equivalent of nearly 20,000 barrels of crude left the country, as appears by carefully compiled statistics of the treasury department, leaving 8,000 for consumption in our own land. To the 20,000 barrels going out should be added the surplus stocks abroad at the beginning of the year, which were consumed before its close. While, therefore, the foreign trade actually took only 20,000 barrels per day, the consumption was really much larger. And further, the demand for this staple has been increasing with each successive year, and it is safe to say the foreign trade took not less than 20,000 barrels per day during the past year. The production is disputed; the general trade accept 26,000 barrels as the correct figures, and this is the amount given for October last. The productive capacity of the region may be said to be equal to anything that a paying trade will warrant, and the duration of the supply may be inferred from the fact that the process of formation of the oil is always going on in the bosom of the earth, and from the additional fact that there are said to be oil wells in Asia that have been flowing for two thousand years. But petroleum became so cheap in the height of the Pennsylvania oil fever as to have checked and almost ruined all other oil trades. The whale fisheries have never recovered from the blow, nor has lard oil. Even the use of coal gas suffered considerable, as the price of that article had become extortionate, and petroleum offered a really available substitute. The latter has also the advantage of being available in the rural districts where coal gas is not. Like every other modern development in the United States, petroleum is running a remarkable course. One important fact seems to have escaped the proper attention of the home producers. This is, that under the wondrous progress of the American petroleum trade, British enterprise has been hunting up petroleum regions all over the world, buying up and working them. Now British capital is an exhaustless well, and British commerce and enterprise are likewise. What they may accomplish in other oil regions is a question of time, and may be inferred from their achievements in other lines. Whether these efforts may not have already achieved a considerable measure of success, and exercised an influence on the trade, is also a matter for grave inquiry and consideration.

There is a petroleum region in California near Los Angelos, which is being worked, and should it acquire considerable development, it may cut off from us the entire petroleum trade of the Pacific. The reaction following the great collapse in petroleum speculation undoubtedly did serious injury to the business; but the trade had genuine vitality in it sufficient to survive such a blow, and gave proofs of this in the extensive investments of solid capital and the increased railroad building to and through the sections. The railway companies in this, as in some other cases, rendered invaluable services by providing the most extensive railroad and shipping facilities, without which the product could not have been marketed. But it is to the increased extent and capacity of the refineries that the permanent development of the trade is to be also largely attributed. For in its crude state petroleum is combustible, explosive and dangerous, while the best refined oil is safe for domestic use. Of course the greatest foreign market is Europe, chiefly in the British Isles, Germany, France, Belgium, Holland, Austria and Spain. With Italy and other countries, petroleum has served as the useful end of a leading export to balance a trade that was heavily against us, and so it should in all cases of that kind. But the consumption of petroleum is in proportion to the advanced grade of the civilization, so that the greatest amount is used in the United States.

The following are the receipts of petroleum at this port for the last eleven years:

Total 1876	1,486,962	Total 1870	1,476,564
Total 1875	1,446,439	Total 1869	1,049,516
Total 1874	1,609,316	Total 1868	1,064,702
Total 1873	1,955,204	Total 1867	970,798
Total 1872	1,165,613	Total 1866	774,504
Total 1871	1,329,250		

MACHINERY AND MANUFACTURES OF IRON.

The character of iron manufactures of the minor classes, or those that consume iron by making it up into tools, machinery, &c., is very variable, and it embraces so many distinct items as to be judged quite as well through its aggregate demand for iron as in any other manner. The consumption of iron and steel for such purposes was greater in 1876 than in 1875, though probably not so great as in 1872 and 1873. The general use of manufactured iron for railway purposes is still small as compared with 1872 on 1873, though larger than in 1874–75. Street railway iron, switches, turnouts, rails, &c., were made to nearly twice the amount in 1876 as compared with each of the two previous years. Locomotives were also made to a number one-half greater than in 1875. The actual number made were one hundred and twenty in 1875, and two hundred and thirty in 1876. Railway cars, which use up a large proportion of iron, were made to an aggregate of twenty per cent. greater in 1876 than in 1875, the exigencies of the Centennial calling for at least this proportion of increase. A very large equipment was provided for the unusual uses of that occasion, most of which continues in use, and was a permanent necessity.

Machinery for iron working was made in about the usual proportion in 1876 ; while there was no increase, there was no material deficiency.

Wood-working machinery was more largely in demand, and a large amount was newly made early in the year, much of it for use or exhibition at the Centennial. Great improvements have recently been effected in sawing, dressing and moulding machines for wood-work, and iron manufacturers have their full share in these.

Machinery for use in textile fabrics has made still greater advancement, the present production being more than double what it was five years ago, and the increase in 1876 being fully as great as in any former year. Looms, knitting machines, combing, carding and spinning machinery, in all forms, have been introduced in largely increasing quantity into both the cotton and woollen industries. These machines consume large quantities of iron and steel, and are to some extent proper to be classed as manufactures of iron.

Hardware, tools and cutlery constitute a greater division than any other. This department has been enormously developed within a few years, and it is now twice as great as in the census year 1869–70. Steel and iron are the staple raw materials, and are consumed in great quantities. Brass and other mixed metals also enter largely into these diversified products, and also wood, leather and various other materials. The entire industry in minor articles of this general class has made great progress within a few years, and its exhibits at the Centennial were subjects of admiration and astonishment to both American and foreign visitors. It is noticeable that the hardware trades have suffered less either by decline in price or decline in demand than almost any others during the recent depression. They gain so much in facilities for cheap and effective forms of production in every year, that the field of consumption supplied by them steadily enlarges. They send to many foreign countries, but in no case rely on foreign markets for their chief support. The home market is constantly enlarging, particularly that afforded by building and the furnishing of buildings. During 1876 a very large demand existed, which may in part have been due to the Centennial, but which is not found to cease at its close in any abrupt manner.

Foreign countries may find important lessons of improvement in the remarkable inventive skill, diversity and utility of forms, and valuable practical uses belonging to the tools and hardwares now made in such vast profusion in the United States. In all probability a vigorous attempt to introduce them into use in Europe generally would be well rewarded. As one instance of such success the house of Alfred Field & Co., of Birmingham, England, advertises a page of items of American hardwares as being there on sale, this announcement now having stood for more than a year in the leading trade journals of England. It is true that the effective use of tools and instruments is as much an American specialty as there manufacture is; and perhaps we shall ultimately send experts in their use to teach the older nations how to diversify and economise production in these departments, in order to open markets there for the tools themselves.

Steam machinery generally has been fairly prosperous as a manufacture during 1876, but not so much is done for export to distant points as was done in 1872. The local demand for the Centennial made business lively early in the year, and its effects are not altogether lost; still the country generally shows a less active demand.

In ship-building machinery and iron work there was a better business in 1876 than in either of the two previous years. The Chester yards were particularly active, consuming great stocks of material and building several very fine vessels. The yards within the city limits had also a fair business, though not building very large vessels. The cheapening of materials has encouraged the continuance of building, and at the close of the year the prospect is fair for a continuance of activity at least through most of the coming year. The enormous increase of the outward shipment of grain, provisions, &c., from this port to Europe is inviting the construction of new and improved steam vessels, which, if made well and at moderate cost, would easily take the place of the inferior vessels made in England in their flush time of ship-building.

Altogether, the consumption of iron and steel in various manufactures has gone on with surprising steadiness in this city and its vicinity, which constitutes the greatest local market for such consumption in the world. The half dozen towns or cities of the near vicinity, as Chester, Camden, Gloucester, and others on the Schuylkill, are all most intimately connected, and make up a single market for consumption of raw material, production of articles, and sale to the country generally. As we have said, it is the greatest of such markets in the world, vastly exceeding Birmingham or Sheffield, in England, and its general business for 1876 has been successful and satisfactory.

LEATHER.

The leather trade of the country has passed through as great fluctuations during 1876 as have been experienced at any time within a like period for fifteen years past, but through judicious management it has recovered from an extreme depression and is now in a healthful and vigorous condition. The great evil of over production has not prevailed in the shoe trade, and has at last ceased to work injury to the leather business. The effects of a foreign demand have been felt in leather. A demand has sprung up in a new and entirely unexpected quarter, viz: the Continent of Europe, which gives good promises of a large field for disposing of the production of this great industry. The year 1876 opened with a quiet leather market in Philadelphia, which continued on for nine months. The Centennial Exhibition exerted no influence whatever upon the trade; in fact the depression was felt even more keenly during the continuance of the Exhibition than either before or after it. The transactions during the closing month of the old year were on a limited scale. The absence of buyers and non-arrival of fresh supplies produced a quiet sensation throughout the market. There never was a more depleted stock than at present, and the severe and stormy weather has completely cut off receipts. Rough stock of all weights are in small supply and a sharp demand, which is expected, will soon force prices up a notch or two. Heavy choice sole leather is slowly advancing and is firm with a limited supply, while receipts have been small. Considerable more inquiry is noted for morocco, especially of the cheaper grades, of which the market is almost bare, and the few lots to be had are held at higher figures. Philadelphia claims decided pre-eminence in the morocco trade. Nearly two millions of goatskins are annually converted into leather, and the excellence of quality is no less remarkable than the quantity. The goatskins are obtained from different countries, and three-fourths of the whole quantity imported into the United States comes to Philadelphia. The goatskins from Tampico are highly esteemed, being large and heavy; while those from Curacoa, though smaller, are very superior, and are chiefly used for making kid gloves and gaiter uppers. The skins are principally imported into Boston and New York, brought to Philadelphia, made into morocco, and many of them returned to Boston to be converted into shoes. Those in the east and other cities are largely supplied with morocco from Philadelphia, and also the principal cities of the west, from Pittsburgh to St. Louis. The climate and water of this city seem admirably adapted to this manufacture; and with the aid of the highest skill, attracted hither as the chief seat of manufacture, contribute to produce results that are not attainable elsewhere in the country. The year closed with an active market and light stocks. Oak sole leather increased from four to five cents per pound within the past six or seven weeks, and slaughter in the rough has increased about ten cents per pound. Goods that were selling a year ago at 23 cents now bring 33 cents. The advance in morocco has been from one to two cents per foot. Grain and wax upper have increased from two to three cents per foot, and is selling now at prices ranging from 19 to 21 cents for grain and 21 to 22 cents for wax upper. From the present outlook the prospect for the ensuing year is very fair, and if a sharp demand should come it would send prices up from one to two cents per pound.

The total exportation of 1876 was 171,393 sides, valued at $908,550; that of 1875 was 211,947 sides, valued at $1,022,590, and that of 1874 was 90,866 sides, valued at $454,333. The exportation of wet-salted hides to Liverpool was 876,636 pounds, valued at $69,166. That to Antwerp was 490,620 pounds, valued at $37,538. The total exports of hides for 1876–5 and '74 were as follows: 1876, 1,367,256 pounds, value $106,704; 1875, 3,540,513 pounds, value $324,424; for 1874 the quantity cannot be ascertained, but the value of goods exported was $639,147. In this connection it may be well to give the number of establishments engaged in the various branches of the leather trade, the capital invested, the value of material used and the value of the product manufactured: Dry-salters—number of establishments, 4; capital invested, $90,000; value of material, $245,544; value of product, $418,500. Skin dressers—number of establishments, 4; capital employed, $221,000; value of material used, $464,864; value of product, $541,800. Tanners, sole and leather—number of establishments, 9; capital employed, $496,000; values of material, $369,000; value of product, $523,460. Curriers—number of establishments, 21; capital employed, $202,100; value of material, $540,814; value of product, $721,880. Calf kid manufacturers—number of establishments, 9; capital invested, $218,000; value of material, $360,440; value of product, $574,043. Glove, kid and deerskin workers—number of establishments, 3; capital invested, $24,000; value of material, $19,167; value of product, $35,682. Morocco (pure goat)—number of establishments, 23; capital invested $789,950; value of material, $1,536,036; value of product, $2,307,113. Fancy linings, &c—number of establishments, 14; capital invested, $461,928; value of material, $524,130; value of product, $1,133,568. Total leather in all forms—number of establishments, 87; capital invested, $2,502,978; value of material, $4,060,615; value of product, $6,254,046.

COMMERCE OF THE PORT OF ERIE.

The Bureau is under obligations to John J. Wadsworth, Esq., Secretary of the Board of Trade, for the following statistics:

EXPORTS BY LAKE.

	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.
Coal, tons	259,012	309,434	312,081	377,457	350,159	325,711	217,590	174,672	*233,012
Railroad iron, tons	301	9,432	18,281	11,417	56,163	3,865	16,331	8	28
Pig iron, tons								1,465	
Iron pipe, pieces	10,606		20,470	7,791	8,411	21,073	18,492	6,001	6,700
Nails, kegs	3,061		31,107		23,748	4,484	15,442	22,806	6,862
Plaster, bbls.					833	1,104	2,856	965	
Stoves	1,320	558	498	274	1,400	2,048	712	300	550
Sugar, bbls	7,688	15,273	20,610	41,101	58,823	39,944	11,416	21,615	43,052
Merchandise, lbs.					60,482,579	42,076,988	24,939,215	29,575,958	38,788,640
Vessels entered and cleared	2,229	2,438	2,306	2,974	2,392	2,594	2,007	1,255	1,514
Tonnage of same	740,894	878,600	899,892	1,398,771	1,277,704	1,160,017	1,097,005	734,384	871,644
Enrolled tonnage of Erie	11,893	12,793	13,837	20,681	16,779	25,934	25,146	24,352	23,210

* Of the coal exported, 60,966 tons was anthracite, and 172,046 was bituminous.

ENROLLED TONNAGE FOR 1876.

Sail vessels	17	Tonnage	7,004
Steam vessels	28	Tonnage	16,206
Total	45	Total	23,210

IMPORTS BY LAKE.

	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.
Barley, bushels	52,322	188,091	359,676	268,391	140,750	202,599	206,467	492,265	334,503
Corn, "	517,684	637,497	301,785	554,228	621,113	1,341,418	1,500,913	859,252	2,958,076
Oats, "	313,319	127,196	42,528	521,000	947,895	351,393	594,965	188,083	305,937
Peas, "	....	....	....	....	....	756	77,457	39,290	38,898
Wheat, "	424,256	672,556	731,898	770,261	937,374	2,511,756	3,624,580	3,093,681	1,791,762
Rye, "	....	....	....	....	....	....	9,031	....	100,098
	1,309,081	1,625,340	1,435,887	2,113,880	2,647,132	4,407,922	6,013,413	4,672,571	5,529,274
Flour, bbs	117,759	156,328	167,610	229,119	178,763	216,309	314,058	320,990	184,983
Flour to wheat	588,794	781,640	838,050	1,145,595	893,815	1,081,545	1,570,290	1,604,980	924,915
Total grain	1,897,875	2,406,980	2,273,937	3,259,476	3,504,947	5,489,467	7,583,703	6,277,551	6,454,189
Lumber, feet	7,840,648	10,459,917	13,183,000	25,971,295	21,287,740	31,299,623	29,767,987	10,194,788	16,152,583
Pig iron, gross tons	3,575	5,153	1,372	5,955	2,667	1,532	2,163	250	340
Iron ore "	112,498	112,406	175,733	197,755	215,219	200,660	154,462	105,190	81,793
R. R. iron, "	....	....	....	....	....	....	1,000	....	....
Copper, lbs	....	....	....	....	....	....	....	2,507,260	....
Merchandise, lbs	....	....	....	4,136,967	6,210,376	6,824,773	9,905,139	4,766,967	4,356,665

The foregoing figures show a slight increase in both imports and exports, and although the increase in the business of our port is not heavy it is gratifying to have reached the bottom and find ourselves on the upward turn. The increase in our grain receipts exclusive of flour, over the season of 1875 is nearly 20 per cent., while at Buffalo there was a decrease of 7,774,758 bushels, or more than 15 per cent., and the decrease in the tonnage of west-bound merchandise from Buffalo was still greater. In this connection it may not be out of place to give the comparative tonnage of all the lake crafts afloat, according to the best data obtainable. I compare the seasons of 1872 and 1876. I have taken the year 1872 because it has been claimed by some newspaper writers that that year was the most prosperous of any that our lake commerce has ever seen. The same writers claim that there has been a reduction of over 200,000 tons in the lake tonnage within the four years mentioned. The fact is, there has been an increase of 137,669 tons. The lake tonnage probably reached its highest point in 1874, since which there has been a slight decrease.

LAKE TONNAGE.

YEAR.	Steam.		Sail.		Barges.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
1872	318	154,933	1426	275,284	181	56,609
1876	353	186,564	1547	349,613	277	88,408
Increase	35	31,631	121	74,329	96	31,709

Total increase of tonnage, 137,669.

GRAIN RECEIPTS BY LAKE IN 1875-6.

The grain received at Erie, in 1875-6, was received from the following ports:

	1875. Bushels.	1876. Bushels.
Chicago	1,051,608	2,229,026
Milwaukee	1,703,960	1,239,099
Toledo	1,267,836	1,719,361
Canadian ports	649,167	341,788
Total	4,672,571	5,529,274

And was exported as follows:

To—	Bushels.	Bushels.
New York *via* P. & E. R. R	1,732,554	1,416,822
Philadelphla *via* P. & E. R. R	1,715,604	3,506,488
Baltimors *via* P. & E. R. R	1,025,637	545,448
Local points on P. & E. R. R	48,955	20,500
E. & P. R. R	28,363	12,101
Erie Local	122,458	27,915
Total	4,672,571	5,529,274

Reducing flour to wheat we get in imports:

	Bushels.
Total grain, 1875	6,277,551
Total grain, 1876	6,454,189
Increase	176,638

The above shows only the grain received by lake. A large quantity of grain is brought to Erie by rail, both for consumption and points east, but I have been unable to get figures.

THE COAL TRADE OF ERIE.

The figures given herewith show a very gratifying increase in the export trade over the previous year. The receipts of coal at Erie during 1876, from all points, were as follows:

Bituminous, tons	247,014
Anthracite, tons	130,000
Total	377,014

Disposed of as follows:

	Anthracite.	Bituminous.
Exported by lake	60,966	172,046
Exported by rail	53,749	10,280
Local consumption	15,285	64,688
Totals	130,000	247,014

OUR LUMBER TRADE.

The lumber trade shows far better results than any other branch of our trade. In 1875 our lumber imports amounted to:

By lake, feet	10,194,788
By rail, feet	6,000,000
Total number of feet	16,194,788

In 1876 we received:

By lake	16,152,583
By rail	11,500,000
Total number of feet	27,652,583

Being an increase over the previous year of 11,457,795 feet, or more than 65 per cent., and the indications are that 1877 will show a still further increase. Our lumber trade is in the hands of live men, who will not allow of any lagging, if energy and good management will keep it going.

MANUFACTURES.

	1875. CAPITAL.	1876. CAPITAL.	1875. MEN.	1876. EMPL'D	1875. PRODUCT.	1876. PRODUCT.
Iron manufactures..	$1,133,000	$1,539,000	713	803	1,208,000	1,345,000
Flouring mills......	210,000	190,000	36	38	950,000	790,000
Brass foundries.....	310,000	320,000	180	205	295,000	300,000
Car manufactures...	562,000	595,000	400	390	523,000	406,000
Stove manufactures,	382,000	280,000	210	190	485,000	370,000
Boots, shoes, leather	221,000	188,000	157	214	452,000	391,000
Oils.................	51,000	30,000	23	10	207,000	125,000
Brewers & maltsters	216,000	269,000	69	87	380,000	459,000
Brick and lime......	125,000	80,000	89	110	60,000	63,000
S., B. and P. M.....	257,000	369,000	133	190	397,000	424,500
Pumps..............	45,000	53,000	32	28	80,000	54,000
Organs..............	180,000	250,000	200	175	400,000	295,000
Woodenware,C., etc.	357,000	377,000	221	206	396,000	323,000
Miscellaneous......	462,000	506,000	331	367	549,000	578,000
Totals..........	4,511,000	5,046,000	2,794	3,013	6,382,000	5,921,500

From the above table it will be seen that our manufacturing interests have held their own, notwithstanding the continued hard times. Two of our largest, or at least among the largest manufactories that we have, have been idle during the entire year, thus locking up some $400,000 capital. Two others, having large capital invested, have run light-handed, producing only about one-eighth of what they could if running full. Other branches have been more fortunate, and have been crowded to their utmost capacity. Taken as a whole, we have little cause of complaint, when we consider the continual financial pressure and the great shrinkage of values in every branch of business.

Erie has every facility for carrying on extensive manufactories—cheap fuel, cheap transportation, energetic men and ample capital. All that we need is the " good times " so often promised, but so very slow in coming.

BANKING CAPITAL OF ERIE.

	Capital, surplus and individual profits.	Deposits.
National banks............................	$1,108,700	$1,042,809
Savings banks and private bankers...........	326,665	1,224,731
	1,435,365	2,267,540

Our building associations, which are savings banks in disguise, have accumulated assets to the amount of $364,447 during the three years that they have been in operation.

Thinking it might be of interest I have prepared the following table showing the date of opening of the harbors of Buffalo and Erie for the past fifty years. The dates are taken from the records of the custom houses at Buffalo and Erie, and show the date on which clearances or entrances were actually made. It will be seen that for fifty years our harbor has been open for business on an average of two weeks earlier than that of our sister city.

OPENING OF THE HARBORS.

ERIE, PA.		BUFFALO, N. Y.	
Year.	Month.	Year.	Month.
1826	April 2	1826	May 23
1827	" 24	1827	" 11
1828	March 5	1828	April 1
1829	Jan. 29	1829	May 21
1830	April 18	1830	April 6
1831	" 14	1831	May 8
1832	" 21	1832	April 27
1833	" 12	1833	" 28
1834	March 24	1834	" 8
1835	April 11	1835	May 8
1836	" 25	1836	April 27
1837	" 17	1837	May 16
1838	March 29	1838	March 31
1839	April 9	1839	April 11
1840	March 27	1840	" 27
1841	April 10	1841	" 14
1842	March 12	1842	March 7
1843	April 11	1843	May 6
1844	" 1	1844	March 14
1845	March 29	1845	April 3
1846	" 23	1846	" 11
1847	April 7	1847	" 23
1848	March 20	1848	" 9
1849	" 25	1849	" 11
1850	" 11	1850	March 29
1851	April 1	1851	April 2
1852	" 1	1852	" 20
1853	May 9	1853	" 14
1854	April 8	1854	" 29
1855	May 10	1855	" 21
1856	" 6	1856	May 2
1857	April 27	1857	April 27
1858	" 3	1858	" 15
1859	" 8	1859	" 7
1860	" 21	1860	" 17
1861	" 15	1861	" 13
1862	March 31	1862	" 6
1863	Feb. 27	1863	" 7
1864	April 1	1864	" 14
1865	" 10	1865	" 27
1866	" 14	1866	" 22
1867	" 5	1867	" 19
1868	" 9	1868	" 11
1869	" 3	1869	May 1
1870	" 15	1870	April 16
1871	March 25	1871	" 1
1872	April 12	1872	May 6
1873	" 17	1873	April 28
1874	March 28	1874	" 18
1875	April 15	1875	May 12
1876	" 7	1876	" 5

Erie averages $13\frac{3}{4}$ days earlier than Buffalo.

OUR MERCHANTS.

Erie being situated, geographically, about midway between two *considerably* larger cities has in reality a "trade district" only on one side, but her merchants have a sufficient amount of pluck, energy and perseverance to push their trade in every direction. The result is that we have had less failures than any other city of our class. Our merchants have prospered notwithstanding the dull times and are to-day ready and willing to successfully meet any competition that may offer.

THE BOARD OF TRADE.

Our organization is still on a sound basis, notwithstanding it has passed the period allotted (by croakers) for its existence. It is to be hoped that our business men will sustain an organization that is so useful in every city—not only by continuing their membership but by active co-operation in all of its endeavors to aid and encourage the business of Erie.

NOXIOUS INSECTS.

BY PROF. S. S. RATHVON.

THE COLORADO POTATO BEETLE, OR "TENLINED SPEARMAN." (*Doryphora decemlineata.*)

Perhaps no other insect in this country has been a greater object of solicitude—not even the "Rocky Mountain locust," nor the western "chinch-bug"—than the individual, the long name of which, stands at the head of this paper. There are certain characteristics and habits pertaining to the potato beetle, which the other two named species are comparatively free from, and as to others of similar habits, the question, by comparison, is one of quantity rather than one of quality. The "locust" and the "chinch" are more local and more singular in their habits, not being much known beyond certain longitudes and latitudes; but the "spearman" is a cosmopolitan, and can adapt itself to almost any latitude or longitude, with remarkable facility; is quite as prolific, and is almost omnivorous in its gastronomical habits—although where allowed, it generally prefers the potato plant, *(Solanum tuberosum)* and therefore is likely to compass the entire continent, the matter only being one of time, and human intervention, or local permission. Potato beetles, generally speaking, are not a new thing in this country, certain species having been known many years ago, perhaps ever since the first cultivation of the potato plant—we ourself, have noticed certain species these forty years or more, but happily these species have rarely amounted to a serious infestation, either in numbers or destructiveness. And, although what is widely known as the "Colorado beetle," may seem to be new—at least within the boundaries of civilization—and so far as the State of Pennsylvania is concerned, *is* new; yet, far up towards the base of the Rocky Mountains, it may have been in existence for hundreds of years, and may have been noticed there by the first white men who penetrated those "far western" regions. More than fifty years ago, this destructive insect was discovered in the Rocky Mountain regions, feeding upon the wild potato plant growing there, *(Solanum rostratum)* and from thence it diffused itself throughout a large area in the realms of civilization, marching slowly but surely eastward, until it has reached the coast of the Atlantic.

Doryphora decemlineata seems to have been a progressive subject of the insect realm, for, no sooner had it gotten a taste of the domestic potato plant, when it was first cultivated in proximity to its native region, than it abandoned the wild plant altogether, and turned its face towards the rising sun, the land of civilization, and ever since then has been "marching along." Insects are not all the stupid creatures they may be esteemed by many, for some of them exhibit rare traits of intelligence—traits that are truly remarkable, when we consider that they do not possess a distinctly organized brain. This intelligence in some instances seems to rise far above the mere impulse of animal instinct, and this appears to be the case with our subject. Else why did it abandon the wild potato plant and give the domestic plant such a marked preference? The domestic plant is more crisp, tender and succulent than the wild, and yields more of the aliment it requires to effect its normal development; and, without a doubt, it increases ten fold more rapidly in our cultivated potato fields than it ever did in its native region, and this accounts for its present numbers.

In this respect it is far in advance of its confrere *Doryphora juncta*, which stupidly confines itself to its native food plant—the "horse nettle"—*(solanum carolinense)* although the domestic potato plant may be abundantly accessible. This latter species, sparsely abounds in localities where the destructive species abounds, but strange to say, it has not yet attacked the cultivated potato plant, nor is its increase any greater than the ordinary insect ratio. It is difficult to distinguish the two species, and many cabinets contained the "spurious potato beetle," under the name of *D. decemlineata*, long before the genuine species domicilated itself in those localities. While the "spurious" beetle has been pretty well known for many years in the southern States, and also in the western, confining itself mainly to the "horse nettle," and a few other plants of a similar character, the "genuine" beetle has not only learned to appropriate the cultivated potato plant, but, keeping pace with human progress, it, in some instances, has preferred the "egg plant," *(Solanum melongena,)* the "tomato," *(Lycopersicum esculentum)* and the "ground cherry," *(Physalis vicosa.)* But more than this, in cases of stress, or great necessity, so latitudinarian is it in its feeding habits, that it has been known to—at least sparingly—appropriate such food as "night shade," *(Solanum nigrum,)* "black henbane," *(Hyoscyamus niger,)* "Jamestown weed," *(Datura stramonium,)* the cultivated tobacco, *(nicotiana tabacum,)* the morning glory, *(Ipomœa purpurea,)* the strawberry, *(Fragaria virginiana)* and even the common thistle, *(Cinium lancoelatum,)* and in a few special cases, on other plants. This illustrates, that, so far as food is concerned, this insect can readily adapt itself to a variety of circumstances, and that it is not likely to starve or die out, even if no more potatoes are cultivated. This hope then of extinguishing the common enemy of the potato crop must give place to that determined effort which has been so successfully inaugurated from the first advent of the insect in the western States, namely, the slow but sure process of "hand picking," the application of machinery, or the administration of various kinds of poisons, the most successful of which, thus far, has been *Paris green.* We consider that the careful application of this drug, its general efficiency and its freedom of contamination to the soil, to the health of the plant, and the quality of the tuber, has been fully vindicated.

But, to return to the progress of this insect, from its origin in the far west, it is not to be inferred that it remained in its native locality until domestic cultivation was brought up to its very doors, before it began its migration eastward. Local as it appears in its general habits, it is nevertheless also somewhat migratory in its character, and has been in the habit of crossing wide streams, passing over wide stretches of territory by flight, or in availing itself of the facilities of railroad, canal-boat and other modes of transportation; and few insects excel it in its powers of multiplication, and the expansion of its territorial area. In July, 1875, we found it in vast numbers strewn along the beach of the Atlantic coast, in places where there could not possibly have been a potato field within four or five miles. And this too in the latter part of July, when the potato fields are comparatively green, and there was no necessity to migrate for the want of food. It seemed to be entirely due to that restless spirit which possesses many animals during their nuptial season.

How far out over the Atlantic ocean these insects flew, before fatigue or other casualties overwhelmed them in its waters, or how many, proportionally, became a prey to the scaly denizens of the deep, before the residue were cast, by the waves, upon the beach, we have no means to estimate. If any confidence can be placed in common report, they dropped upon the deck of a fishing vessel five or six miles from land, and were also discovered on Block Island, which lies about ten miles out from the coast of Rhode Island. Of course, there are other means than flight by which they may have been conveyed to the aforenamed island, but to drop suddenly upon a sailing vessel, precludes any means but flight, and probably in this way they first sought the cultivated field of advancing civilization; and having discovered the edible qualities of the cultivated potato, they preferred it to the wild species, and thus kept on in their eastward course, until they were arrested in their further progress, by the formidable barrier of the Atlantic ocean.

THOMAS SAY, more than fifty-three years ago, described an insect under the name of *dorypha* 10-*lineata*, which he says he found in Missouri and Arkansas; but, from his description and locality given, it is very probable that he alludes to *D. juncta*, the "spurious potato-beetle;" for, according to the late B. D. Walch and Prof. Riley, State Entomologist of Missouri, the true potato-beetle did not appear in that region until many years later than the period of Long's expedition to the Rocky Mountains in 1823, the period when SAY is said to have discovered it. Had it been the true "*Ten-lined Sparma*," as Mr. SAY'S works imply, we think he could not help but have discovered something in relation to its very striking habits ; as it is, aside from its mere description, he is entirely silent as to its habits. At what time it reached the territory of Colorado, and how the "Colorado potato-beetle" was applied to it as its common name has not been satisfactorily recorded. The insect was probably destructive in that region some years before it reached Nebraska, where it was observed, about the year 1860 or 1861 ; and from this time to the present its course has been pretty clearly marked. It reached Pennsylvania in 1872, two or three years earlier than was expected, having passed through the States of Nebraska, Kansas, Missouri, Iowa, Illinois, Indiana, parts of Wisconsin and Michigan, Ohio, West Virginia, Virginia and Maryland ; and since then, through New Jersey and Delaware, and also in New York, Canada and some of the Eastern States. Ordinarily its progress was noted at from fifty to seventy-five miles a year, but almost simultaneously with its appearance in the eastern counties of Ohio it made its appearance in Lancaster county, and at several points westward, along the Pennsylvania railroad, and from this circumstance, and what has transpired of a corroborative character since that period, it seems unquestionable that they were transported hither on the "rolling stock" of the road aforenamed. About two years afterwards they were found on both sides of the railroads in potato fields, from the north to the extreme points of South Delaware, far more numerous than in Pennsylvania. It now seems to be arrested in its further progress eastward by the intervention of the broad Atlantic ocean ; but if care is not taken it may be transported to Europe in the same manner it was brought into the State of Pennsylvania—namely, secreted among the freight of railroad cars, and in the holds of sailing or steaming vessels. It was seen in 1875 out on the trussel work of the "Junction Railroad," at the Delaware "Breakwater," which is carried out a quarter of a mile into the bay, and where the lading of the cars is transhipped to sailing vessels for different parts of the world.

According to the early history of the "Colorado potato-beetle," it has been stated that it hibernates invariably in the ground, and comes forth in the early spring, but this is not universally the case ; for we have seen it desert the potato fields, in autumn, after the stalk became dry, and crawl into crevices, under door steps, and into cellars, from whence it issued again in the following spring and early summer.

Those *larvæ* that go into the ground to effect their transformations to the *pupæ*, and the *imago*, or beetle states—if late in the season—of course the beetles will remain there until the following spring ; but this is not the case with the perfect beetles that are overtaken by cool autumn weather ; for *these*, or at least many of them, will avail themselves of piles of rubbish, or any other cover that will offer sufficient protection. We have *seen* them, as before stated, creep through the grates into cellars and under door steps, late in the fall, and we have also seen them issuing from such places early in the spring. In thus seeking winter quarters they are, or may, be frequently conveyed, in lading, to freight cars, canal boats, coasting vessels, or regular merchant vessels, and transported to other countries, or even to foreign ports. They are exceedingly tenacious of life, and we have seen them embedded in hard frozen earth that was cut out like blocks of ice, in the winter of 1875—in the month of February—seemingly frozen, but within two hours afterwards, in a warm room, they revived and became fully as active as they are in summer. It may be questionable whether they freeze at all, even though embedded in frozen ground; or, whether *any* insect would revive again if once *really* frozen any more than a man, or any other mammal would. Those potato beetles, we refer to, which were taken out of a hard frozen block of earth, did not seem to be frozen at all, although they were perfectly torpid and seemed to have no life in them; but they could be crushed or mashed as easily as they can be crushed in summer. We have had numerous illustrations of this kind in insect life, but it is not germain to the subject to mention them here.

The *Colorado potato beetle* is now permanently domicilated in Pennsylvania, and is likely to remain here for an indefinite period. Whether it could have been prevented from coming here, or could have been extinguished, had the proper method been adopted at the proper time, are questions now not necessarily debatable. Its presence is recognized as an *absolute* presence, and farmers provide for it, anticipate it, and prepare to meet it, just the same as they would for any other unpleasant though possible contingency.

This insect by no means waits in the spring until the potato plant is above the ground. We have noticed it abroad during warm days in March and April; and before its favorite food is accessible, it will feed on almost anything of a vegetable nature—potato parings or the whole tubers themselves. We noticed it on one occasion greedily devouring the small "lambs' quarter" or "pig weed" plants, *(Chenopodium album,)* that precedes the potatoes in the spring; also the young "purslane," *(Portulaca oleracea)* and plants belonging to the order AMARANTACEÆ, especially the common wild "amaranth." But these plants only serve to sustain them until the potatoes are above ground, when they proceed to feed upon them, but especially to deposit their eggs upon them, and it is not known that they deposit them on any other plant.

A farmer in New York State took his seed potatoes to a field that had been infested with the beetle the previous season, and emptied a quantity of them on the ground, previous to planting them When he returned from his breakfast he was surprised to find his seed potatoes infested by the "Colorados," that seemed to have been waiting for them. This fact suggested a plan to circumvent them, and he accordingly cut a sufficient quantity of potatoes into thin slices, and threw them into a box of prepared *Paris green*. These, in the evening he strewed over the field, and the next morning he found thousands of the beetles dead or dying, and his crop suffered little or nothing from these beetles that season. We have reason to believe, however, that there is much in the quality of Paris green.

A farmer from Maryland, about two years ago, sent us an ounce bottle half filled with Paris green, as it is usually prepared, and in it were several living potato beetles: He stated in a letter that they lived in it from twelve to thirty-six hours, and those he sent to us, lived in the "green" at least twenty hours after we received them. This result must, however, he attributed to the inferior quality, or excessive dilution of the poison, and not to it *per se*, as a remedy.

The prolific possibilities of this beetle are very extraordinary, and if we consider duly these, we need not be surprised that they often swarm in such vast multitudes. For instance: an impregnated female beetle, by some means gets into a luxuriant potato field; within the space of forty days she will deposit from eight to twelve hundred eggs. These eggs are usually deposited on the undersides of the leaves in groups of twenty to thirty or even fifty, and as these are deposited at different times, sometimes with several days intervening, there will appear to be different broods, but they are only later and earlier instalments of the same brood. Now, taking one thousand as the average number of eggs, it, therefore, is within the pale of possibility for this one female to produce, in due time, *one thousand beetles* as the first brood of the season. But in the latitude of Pennsylvania two broods, and farther south three broods, occur in a season.

We may safely suppose that one-half of the first brood will be females, and these in a few days will also become fertilized and deposit their thousand eggs each, as the possibilities for a second brood, the numerical result of which would be *five hundred thousand beetles*. A little further south, or in an unusually prolonged summer, even in this latitude, the result of a third brood, on the above principle, would be *two hundred and fifty million of beetles*. These are the prolific *possibilities* of this insect, but perhaps this maximum prolification seldom or never occurs. There are numerous causalities to which this insect is subjected, even if there were no artificial remedies applied for its destruction. There are now known to be about twenty-five different species of insect parasites that prey upon the eggs, the *larvæ*, and the *pupæ* and *imago*, even under ground, and these necessarily diminish its numbers. It also, to some extent, has its enemies among the feathered tribes, the mammals, as well as weather causalities.

When we speak of a *second* or *third* brood, we do not mean that the same female or females will become re-fertilized and re-produce these broods. Second or third broods imply second or third generations. A female is but once impregnated, and when she has deposited her one thousand or twelve hundred eggs, her functions as a progenitor are ended, and there is good reason to believe that neither she nor the male long survives this consummation.

The first duty of the potato grower, then, is to destroy the beetle early in the spring, when it makes its first appearance; this may be done by hand-picking, and destroying them in a vessel of thin whitewash, and thoroughly stirring it up every time a fresh installment is thrown in. After some days this lime and the insects in it can be used as a fertilizer of the land; therefore, this process is better, safer and more profitable than burning or scalding them. Hand-picking can be performed by boys, girls, and women, if the men are otherwise engaged. The next step is to thoroughly examine the potato plants every morning, noon, and evening—or at least once every day—and to destroy all the eggs that may be found there, for some of the beetles may escape the vigilance of the hand-pickers. If these duties have been thus far thoroughly discharged, there will be little dangers from the infestation; but as some of the eggs may have eluded the vigilence of the examiner, the *larvæ* are now to be looked for, and when they are found, liquid or dry Paris green should be applied, unless some implement should be preferred to knock them off the plants to be destroyed, as stated above, or by any other safe and convenient means. *Peck's Atomizer* is a good contrivance to apply liquid poisons, and the proportion is one good tablespoonfull of the best Paris green to a gallon of water. This liquid is forced through a compound pipe in the form of spray, which reaches the lower as well as the upper sides of the leaves of the plants. Iske's patent oscillating brush, an implement on wheels and drawn over the rows, may be preferred by some. This machine knocks the insects off into troughs at the bottom, which are emptied, and the insects destroyed. But those who prefer to use the dry pulverized Paris green should get the best article, and mix thoroughly one pound of the poison with twenty pounds of damaged flour, shipstuff, or powdered gypsum, (plaster of Paris,) and apply it through a large box made like a pepper box, with a handle three or four feet long attached to it. The box should hold about a quart of the mixture. When a group of the insects are discovered the box should be inverted over them, and a smart rap struck on the handle with a billet of wood made for that purpose. This will discharge sufficient to kill the group; and not only this, but it will be discharged at the spot where it is needed, and is entirely under economical control.

Although the use of Paris green is objected to by some people as dangerous to the handler, and injurious to the soil, there is no authenticated fact that such is the case. Experiments have been conducted under the auspices of the *Agricultural Department* at Washington City, which go to show that the application of this poison can neither effect the quality of plant or the tubers ; moreover, for fifteen years or more, the farmers of the west have relied on Paris green alone, as a remedy, without any detriment to the quantity or quality of the crop ; and that being a *practical,* and not merely a theoretical result, it ought to go very far in reassuring those who have heretofore been doubtful. It is, however, like all other poisons, and must be "handled with care." It is a mineral poison, insoluble in water, or in moist soil, and therefore could not be taken up by the plant. However true the evil effects of the poison may be in *theory,* it has not been sustained by *fact* ; moreover, thousands of experiments in different localities, attest the efficacy of the remedy and its freedom from injury to the soil.

Before we conclude this part of the subject, however, we feel it necessary to admonish persons handling Colorada potato beetle, to be careful not to inhale the dust of the poison, nor yet the steam from scalded beetles, or the fumes of burning ones, nor to allow, either the poison or the crushed insect to get into any sore or cut upon their hands, or elsewhere, as some well attested cases of poisoning from this cause are on record. Destroying the tops of the potato plants, before the plants have been permitted to bloom, and by such disgusting insects as the *larvæ* of the Colorada potato beetle, must of itself effect the quantity and quality of the tubers, just as they may be affected by long periods of intensely cold, wet, or hot and dry weather ; as they were affected in the latter part of the summer of 1876, in Pennsylvania, and especially in the county of Lancaster and contiguous territory, as well as in other districts.

Figure I. Represents the true "Colorado potato-beetles," about the natural size, except *e*, which is magnified to show the peculiarity of the lineations of the wing covers (*elytra ;*) *a.* are the eggs attached to the under sides of the leaves of the potato plants ; *b.* the larva as they appear in their various stages of development. Nearly black when they first come from the eggs, but as they grew larger becoming various shades of orange red ; head and feet black ; two rows of black dots along each side ; a transverse black band across the thorax, leaving an orange colored margin in front and a spotted margin behind ; one or more black or dark stripes lengthwise over the back ; *c.* the pupa as it appears under ground ; at first of a very light yellowish color, but it soon turns to a deeper clay yellow ; *d.* the mature beetle, a clay yellow, with black stripes, dots and other markings as shown in the illustrations; *e.* the elytra magnified, and *f.* one of the posterior legs in which the *tarsi* are dark, the upper joints clay.

Figure II. Represents the "spurious potato-beetle;" *a.* the eggs deposited on the leaves and stalks of the "horse nettle;" similar in form to those of the genuine beetle, but much lighter in color; *b.* the larva, similar in form to the true insect but lighter in color, with only one row of spots along the sides; the head and feet are light colored, and the thorax entirely black; *c.* the mature beetle differing very little in size, shape and color from the genuine beetle, except as exhibited in the magnified elytron *d*, in which it will be observed that the two lateral or marginal and submarginal dark stripes are nearly or quite confluent; *e.* a posterior leg in which the *tarsi*—as well as the whole limb—are a clay color, and a farther distinctive mark will be found in the oval femoral spot. There are other differences, but those enumerated are the most prominent. It will be observed that both of these species, in their different stages of development, present slight or superficial variations.

But, we have also other species of potato beetles, five of the most prominent of which, we have grouped under figure III, and our memory of some of these runs back to the days of our boyhood. *A* is the "three striped potato beetle," *(Lema trivittata)* and which feeds on potato tops, and perhaps also on other solanaceous plants. This insect when it occurs in great numbers is almost as destructive as the Colorado beetle, and much more disgusting. Its length is indicated by the line at the side of the figure. These insects undergo all their transformations on the plant, and do not pupate underground. The *larvæ* has two long anal appendages, or filaments which it turns up over its back, and it has the habit of casting up its excretal discharges on these filaments, until it finally covers the whole body and nothing beneath it is visible but the head and feet. This insect is a pale yellowish above, and a deeper yellow beneath, with three black or brown stripes on the wing covers. It will sucumb to any remedy that will destroy the Colorado beetle.

The four following belong to the CANTHARIDES, and perhaps are more widely known as "blister beetles," and the family in this country, is an exceedingly large one, some of which are said to possess as powerful a vesicatorial property as the "Spanish fly" of commerce. These insects do not feed exclusively on the potato vines, but on a variety of other plants, both wild and cultivated. Little or nothing is known of their *larvæ,* but they are supposed to live under ground, but whether they live upon vegetable or animal food exclusively, is not distinctly known. They appear and depart suddenly, in the beetle state, and are voracious feeders; and when they are numerous they can defoliate a plant as quick as any insect we know of; *b.* is the "ash colored potato beetle, *(Lytta cinerea.)* Length of the hair line to the right of the figure. The members on the left illustrate the distinctions between the male and female *antennæ, d.** being the male, and *d.*† the female; *c.* is the "black potato," or "blister beetle," the same in size as *b.* but a glossy or silky jet black, and more numerous than the last named. It is perhaps the more numerous among this group, and when disturbed, quickly lets go its hold and falls to the earth, where it hides itself and "plays possum" for sometime thereafter. The members on the left of this, also illustrate the sexual difference of the *antennæ; d.* is the "striped blister beetle," *(Lytta vittata,)* or potato beetle. The colors are a brownish yellow and black, and the size about the same as the two above, but all of these species vary very much in size; *e.* is the "margined potato," or "blister beetle," *(Lytta marginata,)* black above and ash colored beneath, with a narrow ashen margin around the wing covers, *(elytra.)* These insects must surely become valuable at some future time, for their vesicatorial properties. Their destruction is difficult, because they immediately drop from the plant, and hide, when they are interrupted; hand picking is the only remedy.

We now, in conclusion, will briefly notice a few *insect friends*, and if an intelligent discrimination could be cultivated in favor of these and many others of a similar character, as much could be ultimately effected through them as through artificial remedies.

These we esteem as "insect friends," and we arrange them in two groups, under figures IV and V. Under figure IV, *a* and *b* are the *larvæ* and *imago* of what has received the common name of "Firey ground beetle," *(Calosoma calidum)* and they are represented the natural size. The color of *a* in its earlier stages is nearly black, but as it increases in size the abdominal portion becomes of a dusky color, and when the abdomen of the female becomes distended with eggs, the fleshy skin between the segments becomes of a much lighter color—almost a white—and the body is then broader than it is here represented. The perfect beetle or *imago, b,* is of a dull black color generally, and has the thorax narrowly margined with blue, and has rows of brassy or coppery dots on the wing covers.

There are several species of these ground beetles indigenous to Pennsylvania, but they all have pretty much the same habits. They belong to the family CARABIDÆ, and the order COBOPTERA; and are predaceous or carnivorous, in their habits, feeding exclusively on other insects, both in their larva and mature states; feeding both above and under ground, often ascending trees and shrubbery in pursuit of caterpillars, for which they have a marked partiality. Since the advent of the Colorado potato beetle in the west, these insect friends have been doing good service, in slaughtering the *larvæ* of those beetles. Unfortunately, however, these friends do not increase as rapidly as their hosts do, hence their benefits are limited;

nevertheless they often destroy more other insects than they possibly can consume. We have confined them with other softer insects, and in an almost incredibly short space of time, they have not only destroyed them, but also devoured all but the feet, wings and *antennæ,* and sometimes the heads and wing covers.

In the same group, *c.* represents a *hemipterous* insect—one belonging to the suctorial division of the insect class. Its length is indicated by the perpendicular line at the left of the figure, and its colors are brown, blackish and grey. The anterior pair of feet are robust and spined, *(raptorial,)* suitable to seize and retain its prey, and from this circumstance it is called the "rapacious soldier bug," (*Reduvius rapatorius.*) This insect has long been known to prey upon other insects of various kinds, especially upon the soft bodied. But since the spread of the Colorado beetle, it pays its *devours* to the *larva* of that species, and in some localities, and where discriminations are made in its favor, it destroys many of them. There are several species of reduvians, of similar form, color and habits but differing greatly in size. They seize their prey with the two anterior feet, pierce them with their formidable proboscis, and then leisurely suck out the entire contents of the body, casting aside the empty skin, as a boy would the skin of a grape or an orange. To the right of the last described insect, is the *d.* representing the "spotted lady bird," (*hippodamia maculata,*) color red, with black spots, and the size of it indicated by the line on the right. This insect is a friend in a very special sense, for it not only destroys the eggs of the potato beetle, but also its young larvæ. Not only the mature lady bird, but also its larva, feed on the eggs and larvæ of the Colorado pest, and as all its transformations take place on the potato vines, it is always on hand to do its useful work; therefore, it should be spared. Of the group under figure V, *a.* and *b.* are the "spined soldier bug," (*arma spinosa,*) *a.* is the proboscis or piercer, magnified, and *b.* is the insect itself, natural size, with the right wing expanded. The color is a greenish or greyish above, and yellow or greenish-yellow beneath. This insect has been noticed in various parts of Lancaster county during the summer of 1876, destroying the potato beetle. It belongs to the order HEMIPTERA, and feeds on its *larva, pupa* and *imago* states, on these and other soft bodied insects.

But perhaps *c* is the most efficient among all these insect friends, being a true parasite, and so far as known only infesting the bodies of potato beetles. It is about the size of a common house-fly, and much resembles that familiar little insect, and also belongs to the same natural order (DIPTERA.) Its colors are grey and black, and its size and expansion of wings are indicated by the cross-lines at the bottom of the figure. This insect deposits its eggs (one or more) on the body of the larva of the Colorado beetle, and from that moment its doom is sealed ; for sooner or later it comes to certain "grief." This is the "Tachina fly," (*Lydella doryphora.*) As soon as the egg is hatched the young maggot works its way into the body of its host, and feeds upon its substance. When the larva of the potato beetle enters the ground to transform, it carries the parasite in its body with it, and there the maggot is fully developed, pupates, and finally evolves, coming up out of the ground, and leaving the dead body of its host behind, as a fertilizer of the soil.

The "Converged Ladybird" (*Hippodannia convergeus*) *d*, *e* and *f* of the same group, represents another effective little insect friend. The illustrations are of the natural size, and the colors are a dull red, black and white. This insect both in its *larva* and *imago* states feeds on the eggs of the Colorado beetle, as well as on the *aphids* which infest the potato, and other plants, and its greater efficiency is owing to the fact that it is more numerous than any of the species named. Some years ago when the "Oat Aphis" (*Aphis avena*) was so abundant in Pennsylvania, long before the "Colorado potato beetle" invaded the State, we found these little friends in tens of thousands, almost everywhere in the infested oat field, gorging themselves with these little *aphid* enemies. Thus it will be perceived that by the economies of these "insect friends" and the judicious application of artificial remedies (discriminating between friends and foes) the intelligent and vigilant farmer may still secure a good crop of potatoes, in spite of the *Colorado Potato Beetle.*

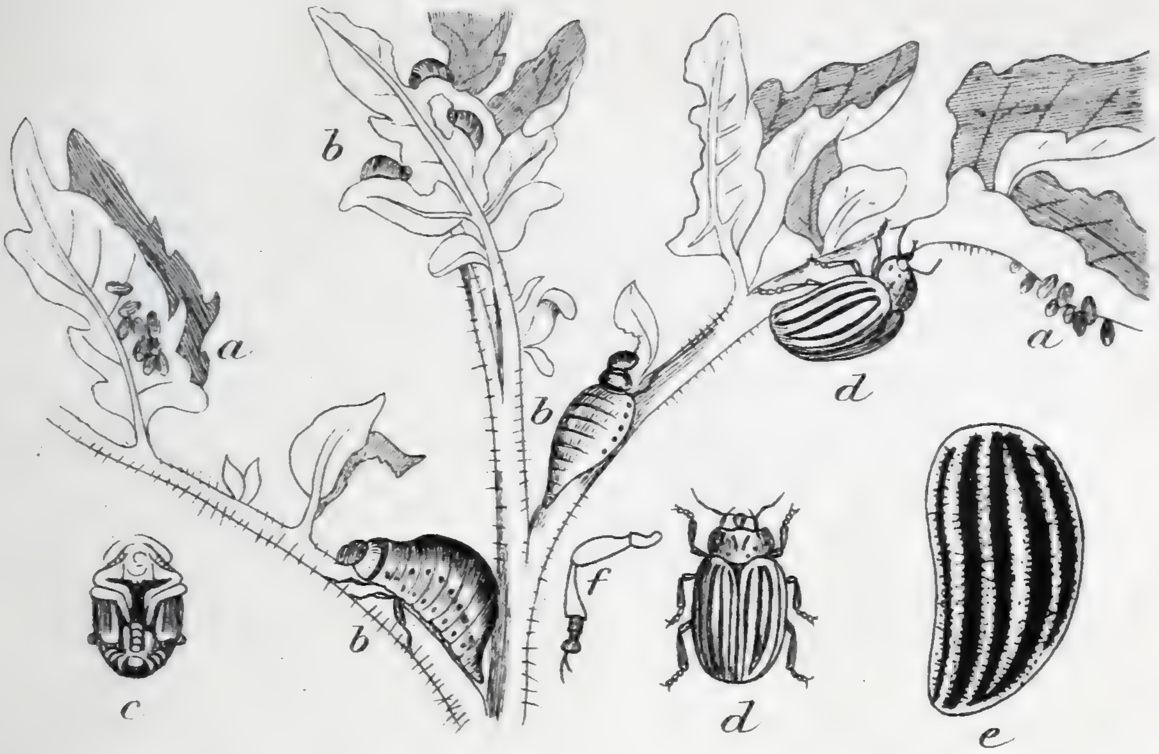


Figure I.

Colorado Potato Beetle (Doryphora 10 Lineata)

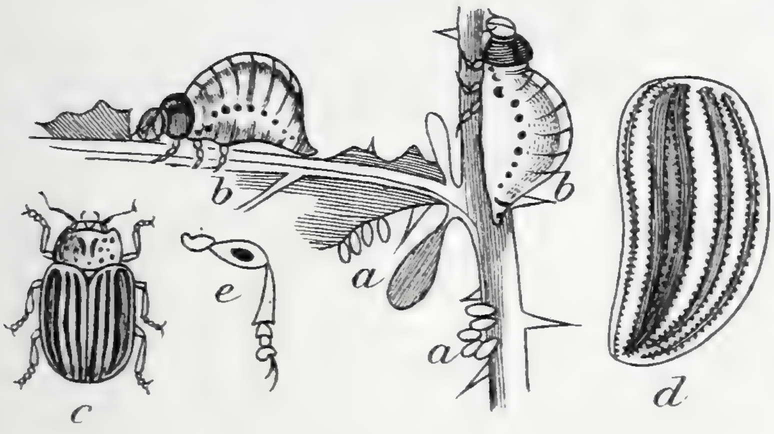
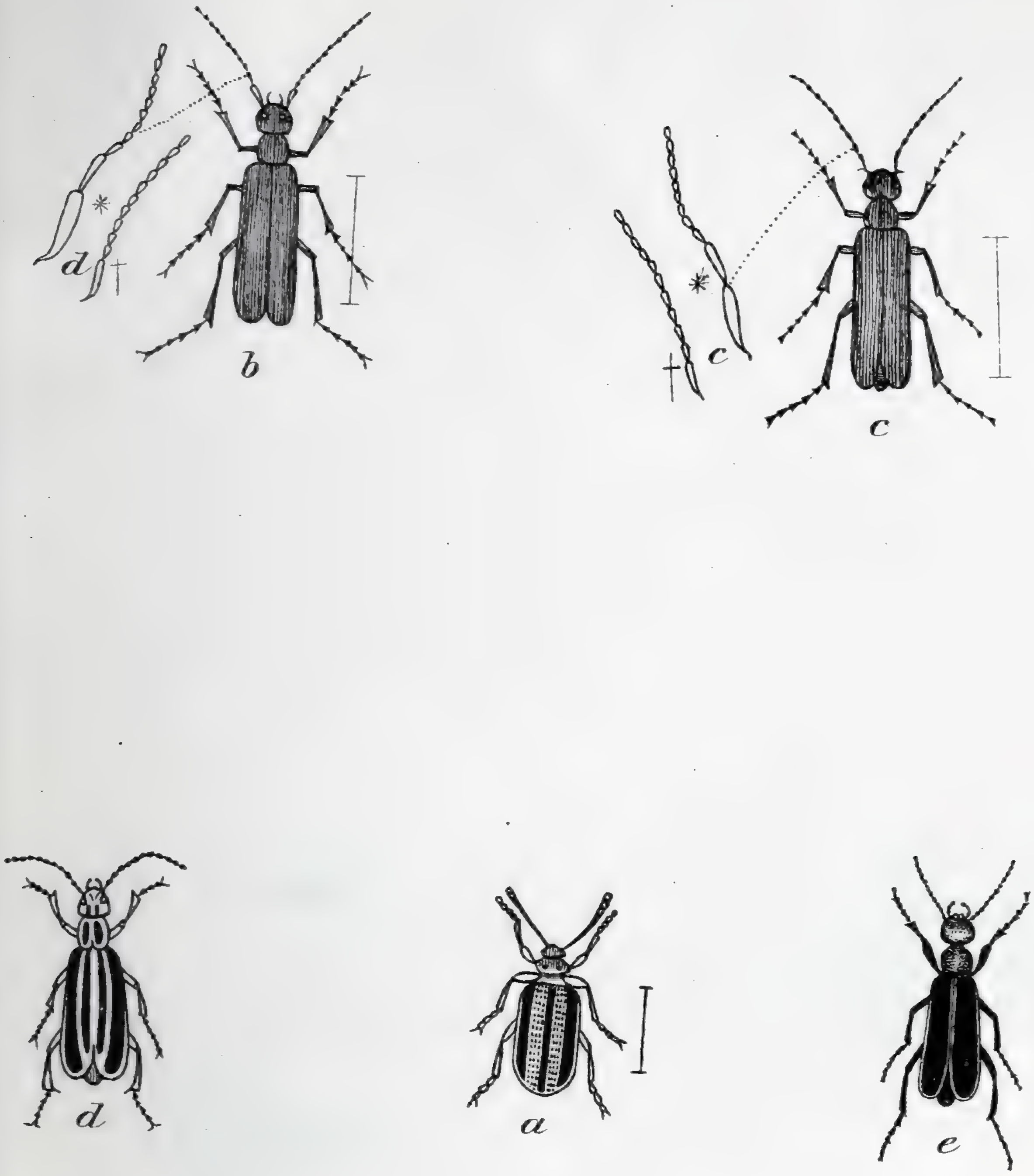


Figure II.

Spurious Potato Beetle (Doryphora Juncta)



A Group of Potato Beetles.
Figure III.

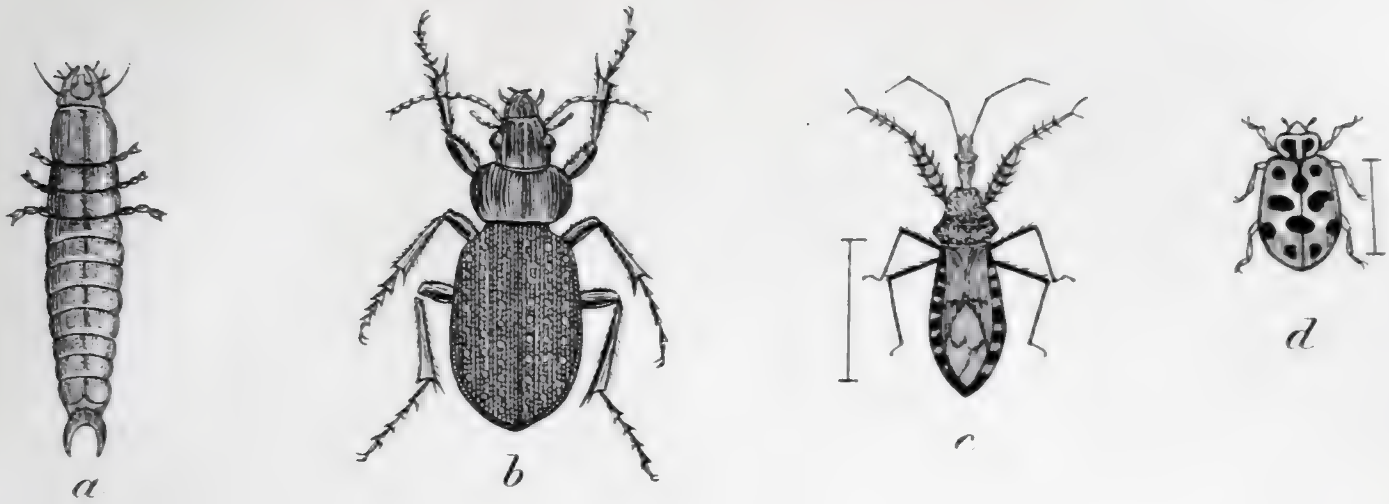


Figure IV.

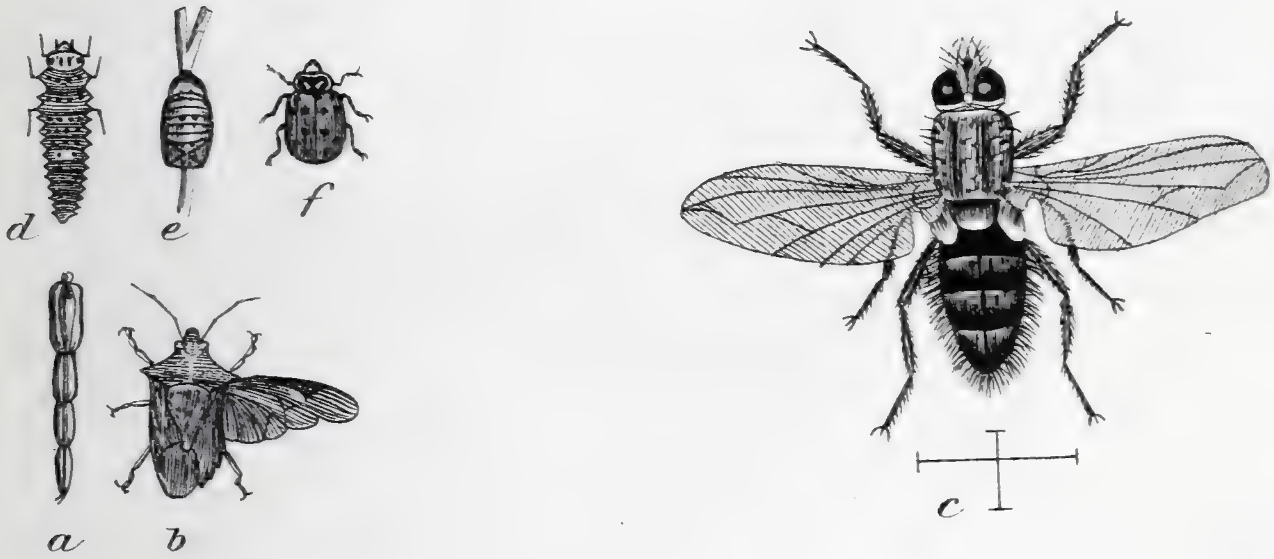


Figure V.

TWO GROUPS OF INSECT FRIENDS.

SCHOOL STATISTICS.

From the report of the Superintendent of Public Instruction we obtain the following statistics:

Number of school districts in the State		2,103
Number of schools		17,497
Number of graded schools		5,957
Number of school directors		13,960
Number of superintendents		89
Number of teachers		20,192
Average salaries of male teachers per month		$39 76
Average salaries of female teachers per month		$33 60
Average length of school term in months		6.85
Number of pupils		902,345
Average number of pupils		578,718
Percentage of attendance upon the whole number registered,		78
Average cost of tuition per month for each pupil		90 cts.
Cost of tuition for the year	$4,856,888 91	
Cost of building, purchasing and renting school houses	1,735,148 87	
Cost of fuel, contingencies, debt and interest paid	2,471,890 90	
Total cost for tuition, building, fuel and contingencies		$9,063,928 68
Total cost including expenditures of all kinds		9,163,928 68
Total State appropriation		1,000,000 00
Estimated value of school property		26,265,925 98

Including the amounts expended for Normal schools and Soldiers' Orphan schools, the full sum expended by the State for school purposes during the year 1876, was $9,624,458 95.

The changes in the most important items of our school statistics, as compared with last year, are as follows:

Increase in number of districts	14
Increase in number of schools	405
Increase in number of graded schools	332
Increase in number of school directors	135
Increase in number of teachers	312
Decrease in the average salary of male teachers per month,	$1 31
Decrease in the average salary of female teachers per month,	49

School term the same as last year, nearly seven months.

Increase in number of pupils	10,272
Increase in average number of pupils	26,870
Increase in cost of tuition	$110,013 39
Decrease in cost of building, purchasing and renting	324,315 96
Decrease in cost of fuel, contingencies, debt and interest paid	23,575 12
Decrease in cost of expenditures of all kinds	199,998 39

The "hard times" have cut down teachers' salaries, but in all other respects the results of the year's doings are encouraging.

As a matter of interest to the friends of education, I present in this connection a table showing the educational growth of the State during the past decade:

TABLE *showing the educational growth in the past ten years.*

Year	Graded schools	Superintendents	Average salary of male teachers per month	Average salary of female teachers per month	Cost of tuition	School houses	Total cost, including expenses of all kinds	No. of teachers who attended County Institutes
1866	2,800	66	$34 34	$26 31	$2,748,795 08	$725,000 00	$4,195,258 57	3,704
1867	3,225	68	35 87	27 51	3,028,065 70	1,262,798 68	5,160,750 17	3,944
1868	3,362	75	37 28	28 76	3,273,269 43	1,991,152 55	6,200,539 96	10,268
1879	3,425	76	39 00	30 52	3,500,704 26	2,455,847 71	6,986,148 92	11,381
1870	3,872	79	40 66	32 39	3,745,415 81	2,765,644 34	7,791,761 20	11,210
1871	4,634	81	41 04	32 86	3,926,529 88	3,386,263 51	8,580,918 33	11,890
1872	4,998	85	41 71	34 60	4,104,273 53	2,864,113 35	8,345,072 78	11,625
1873	5,307	86	42 69	34 92	4,325,797 47	1,753,812 36	8,345,836 41	12,302
1874	5,586	86	42 95	35 87	4,527,308 03	2,160,514 87	8,847,939 88	13,970
1875	5,625	87	41 07	34 09	4,746,875 52	2,059,465 83	9,363,927 07	13,863
1876	5,957	89	39 76	33 60	4,856,888 91	1,735,148 87	9,163,928 68	13,523

ESTIMATED VALUE OF SCHOOL PROPERTY OF THE STATE.

Adams	$124,050	00
Allegheny	3,779,900	00
Armstrong	212,760	00
Beaver	225,777	73
Bedford	140,788	75
Berks	700,000	00
Blair	200,540	00
Bradford	304,304	00
Bucks	354,753	70
Butler	225,657	75
Cambria	254,750	00
Cameron	26,800	00
Carbon	183,200	00
Centre	200,000	00
Chester	486,093	00
Clearfield	169,235	00
Clarion	118,900	00
Clinton	142,646	00
Columbia	150,355	00
Crawford	448,400	00
Cumberland	277,150	00
Dauphin	688,110	41
Delaware	345,506	00
Elk	68,600	00
Erie	510,150	00
Fayette	341,300	00
Forest	16,800	00
Franklin	250,000	00
Fulton	27,000	00
Greene	173,000	00
Huntingdon	139,552	50
Indiana	188,300	00
Jefferson	152,000	00
Juniata	72,180	00
Lancaster	736,500	00
Lawrence	$160,577	00
Lebanon	195,750	00
Lehigh	700,625	25
Luzerne	1,088,410	57
Lycoming	288,418	00
M'Kean	68,300	00
Mercer	300,450	00
Mifflin	124,993	00
Monroe	64,700	00
Montgomery	500,379	00
Montour	104,600	00
Northampton	596,118	57
Northumberland	340,505	00
Perry	128,878	00
Pike	35,650	00
Potter	81,185	00
Schuylkill	759,295	30
Snyder	78,240	00
Somerset	116,100	00
Sullivan	30,492	00
Susquehanna	158,195	00
Tioga	203,922	50
Union	85,350	00
Venango	246,780	00
Warren	177,097	00
Washington	234,500	00
Wayne	96,050	00
Westmoreland	451,901	80
Wyoming	50,150	00
York	364,215	15
Philadelphia	6,004,038	00
	26,265,925	98

COUNTY TABULAR STATEMENT, FOR THE SCHOOL YEAR ENDING JUNE 1, 1876.

COUNTIES.	SCHOOLS.		TEACHERS.				SCHOLARS.					TAX AND RATE PER CENT.		
	Whole number......	Average number of months taught.....	Number of males...	Number of females,	Average salaries of males per month..	Average salaries of females per month,	Number of males...	Number of females,	Average number attending school.....	Average percentage of attendance......	Cost of teaching each per month.........	No. mills levied for school purposes....	No. mills levied for building purposes..	Total amount of tax levied for school & building purposes,
1 Adams............	164	5.26	93	73	$31 97	$27 44	3,899	3,366	4,907	74	.78	2.32	1.54	$36,008 09
2 Allegheny........	974	8.66	216	793	57 07	42 29	26,108	26,084	37,076	79	1.01	1.80	1.09	932,135 69
3 Armstrong........	261	5.39	163	106	41 12	34 40	6,730	5,933	8,252	75	.76	5.83	3.51	75,919 25
4 Beaver...........	193	5.94	94	102	41 69	31 69	4,509	4,139	6,474	79	.89	8.07	6.05	63,247 70
5 Bedford..........	228½	5.07	181	55	36 59	30 38	4,903	4,124	5,972	79	.95	7.16	4.30	47,591 55
6 Berks............	558	6.30	387	174	35 73	32 92	13,905	11,770	18,356	79	.83	4.68	3.01	184,683 71
7 Blair............	186	6.53	186	135	61 37½	39 49	5,143	4,525	6,787	77	.88	7.36	3.30	74,839 09
8 Bradford.........	399½	6.17	181	474	33 49	19 66	8,294	7,279	10,056	75	.89	7.80	4.27	80,126 19
9 Bucks............	281½	7.75	158	152	43 01	37 58	8,450	6,774	8,818	80	.88	5.32	2.97	118,363 64
10 Butler..........	237	5.60	176	175	37 68	29 37	6,536	5,925	8,607	74	.71	6.84	5.77	68,987 25
11 Cambria.........	209½	5.68	105	88	37 56	31 03	5,223	4,662	6,260	73	.80	9.05	5.17	64,643 08
12 Cameron.........	36	6 15	15	37	44 86	36 47	622	604	830	77	1.47	9.	4.33	8,088 37
13 Carbon..........	130	6.22	81	51	51 49	35 79	4,233	3,729	4,701	76	.89	11.	7.36	57,464 58
14 Centre..........	211	5.30	164	55	39 08	35 22	4,817	4,095	6,163	68	.96	4.67	2.61	57,968 63
15 Chester.........	352	8.66	84	326	40 99	37 37	9,530	8,237	10,217	77	.92	2.39	1.67	165,883 68
16 Clarion.........	206½	5.31	136	119	32 90	26 30	5,084	4,504	6,112	73	.71	9.20	7.	58,182 43
17 Clearfield......	199	5.23	120	83	39 12½	33 06¼	4,499	3,910	6,559	74	.96	6.68	5.	40,862 52
18 Clinton.........	139	5.71	85	61	36 67	32 50	3,146	2,795	4,123	77	1.04	8.66	6.23	48,829 67
19 Columbia........	178	5.79	120	93	37 27	27 21	5,112	4,307	5,734	75	.83	6.98	4.93	56 270 33
20 Crawford........	421	6.45	171	536	34 37	21 65	8,754	7,903	11,677	72	1.00	3.41	3.49	118,378 56
21 Cumberland......	231	6.67	141	96	40 12½	35 84	5,518	4,862	7,479	81	.97	5.11	2.97	78,069 71
22 Dauphin.........	285½	6.70	212	96	39 87½	34 56	8,585	7,697	10,633	70	.87	5.45	3.67	153,918 22
23 Delaware........	142	9.16	27	128	52 69	44 99	4,623	3,904	4,811	79	1.01	2.54	1.44	117,634 93
24 Elk.............	63	6.65	46	54	42 04	34 05	1,124	1,039	1,548	81	1.59	8.63	5.20	23,587 21
25 Erie............	396½	7.32	120	469	44 11	25 58	8,146	7,084	10,187	83	.95	2.71	1.19	172,610 34
26 Fayette.........	245	5.47	175	73	41 25	35 33	6,159	5,366	7,303	76	.87	4.53	2.83	80,651 95
27 Forest..........	43	5.60	19	38	34 10	28 66	142	521	690	78	1.44	6.28	5 58	9,640 86

28 Franklin	257	5.94	194	70	36 74	30 40	6,286	5,252	8,044	77	.84	3.97	1.13	70,370 92
29 Fulton	71	5.	55	22	25 40	24 62	1,493	1,310	1,719	75	.87	8.	1.58	10,371 25
30 Greene............	187	5.16	144	49	30 26	30 64	4,215	3,383	5,411	75	.86	4.77	3.50	41,771 81
31 Huntingdon	216	5.24	163	58	33 19	30 47	4,718	4,377	5,854	75	.88	8.53	6.21	53,361 38
32 Indiana	243	5.16	171	109	34 66	30 97	5,590	5,152	7,061	76	.78	4.11	2.18	53,950 88
33 Jefferson	170	5.27	113	115	31 99	24 13	4,328	3,600	5,031	72	.83	10.53	6.	34,842 29
34 Juniata...........	101	5.10	70	31	35 61	31 84	2,563	2,179	3,295	79	.80	8.24	3.13	26,150 70
35 Lancaster	547	7.10	292	263	42 96	37 72	15,101	11,838	19,435	82	.88	2.09	1.32	232,761 99
36 Lawrence	162	6.15	83	141	42 93	29 66	3,716	3,572	5,195	78	.93	7.49	4.08	49,500 36
37 Lebanon.........	191	6.21	155	37	36 81	33 68	4,743	3,877	6,069	80	.86	4.48	3.	73,249 98
38 Lehigh	287	6.66	218	75	44 68	32 56	8,424	7,037	10,166	84	.86	2.40	1.16	126,628 50
39 Luzerne	674½	7.97	274	375	50 20	31 22	24,078	22,226	28,601	73	.74	6.46	7.02	416,020 95
40 Lycoming	284	5.75	176	136	37 40	31 59	6,976	6,183	8,810	76	.99	9.81	6.50	108,737 28
41 M'Kean	96	6.24	19	148	35 37	23 72	1,637	1,412	2,024	69	1.26	11.67	8.36	19,112 32
42 Mercer.....	296	7.	162	331	41 50	24 04	7,877	6,988	10,952	78	.83	2.21	2.04	95,252 14
43 Mifflin	104	5.63	69	36	35 90	33 47	2,676	2,191	3,147	81	.81	6.	3.33	30,861 23
44 Monroe...........	129	5.09	106	31	30 62½	27 90	2,742	2,296	2,901	74	.77	10.89	5.67	24,257 22
45 Montgomery......	326	7.66	185	146	44 66	38 06	10,036	8,642	11,153	78	.79	3.28	1.52	168,397 46
46 Montour..........	76	6.34	40	41	36 60	27 22	1,893	1,736	2,310	74	.85	6.08	5.01	29,195 54
47 Northampton	283	6.83	229	66	47 18	32 48	7,823	6,916	10,478	79	.95	2.19	.49	146,440 47
48 Northumberland,	232	6.38	172	79	42 93	31 29	6,718	5,863	7,601	75	.80	4.40	5.67	83,845 65
49 Perry.............	183	5.11	153	33	30 51	28 51	4,075	3,512	5,096	80	.86	4.41	5.60	42,622 23
50 Pike..............	56	5.71	25	43	27 23	22 39	1,402	1,206	2,031	74	.92	9.50	3.85	10,898 41
51 Potter	121	5.67	46	148	28 48	23 17	1,802	1,700	2,364	78	1.17	12.09	8.21	22,589 23
52 Schuylkill	507	8.10	276	239	53 68	33 55	17,742	15,659	20,494	76	.81	5.87	2.52	290,928 27
53 Snyder	107	5.05	101	9	28 60	26 25	2,871	2,397	3,246	74	.72	4.61	3.58	23,795 52
54 Somerset	225	5.03	177	55	32 38	26 04	4,656	3,901	5,957	74	.97	7.98	5.18	40,191 23
55 Sullivan..........	61	5.08	33	45	28 56	21 15	1,037	833	1,169	71	1.16	9.90	4.71	8,314 52
56 Susquehanna.....	293½	6.21	121	368	32 35	20 09	5,325	4,280	5,988	78	1.12	10.	5.	50,607 73
57 Tioga	294⅓	6.34	119	327	41 48	23 00	9,769	5,359	6,867	72	.90	7.66	4.09	67,757 64
58 Union	85	6 27	74	32	37 11	29 60	2,351	1,880	2,626	76	.82	3.43	3.83	25,151 98
59 Venango..........	240	6.27	133	207	47 47	32 74	5,718	5,321	7,415	75	.98	5.03	3.79	107,125 61
60 Warren	182½	5.94	52	221	41 55	31 00	3,219	2,908	4,198	81	1.24	3.60	2.11	48,386 04
61 Washington......	293	5.79	155	150	41 06	37 70	6,644	6,264	8,822	79	1.01	5.07	2.86	104,762 21
62 Wayne	210	6.34	70	195	34 12	20 35	4,619	3,992	5,303	75	.90	8.82	8.65	36,552 09
63 Westmoreland ...	354⅓	5.44	246	116	44 42	34 79	9,987	8,766	12,425	78	.94	3.43	2.17	115,760 32
64 Wyoming	98½	7.15	65	135	28 37	16 77	2,265	1,853	2,860	82½	.79	3.21	3.08	16,983 21
65 York	406	5.31	284	114	33 65	31 21	11,022	9,474	13,293	75	.71	2.03	1.37	109,464 04
	15,619	6.47	8,876	9,438	38 72	30 42	398,841	350,473	495,743	76	.91	6.27	3.89	6,003,443 31
66 Philadelphia	1,878	10.	77	1,801	159 57	50 31	76,125	76,906	82,975	54	.98	....	....	1,984,720 45
	17,497	6.85	8,953	11,239	39 76	33 60	474,966	427,379	578,718	78	.90	....	....	7,988,163 76

COUNTY TABULAR STATEMENT—Continued.

COUNTIES.	RECEIPTS.			EXPENDITURES.				RESOURCES AND LIABILITIES.	
	State appropriat'n	From taxes and all other sources, except State appropriations	Total receipts.....	Cost school houses, purchasing building, renting, &c..	Paid for teachers' wages............	Paid for fuel & contingencies, fees of collectors, &c., and for other expenses	Total expenditu's,	Resources	Liabilities ....
1 Adams..........	$8,143 15	$42,427 85	$50,571 00	$9,208 52	$26,385 00	$12,009 95	$47,603 47	$8,140 94	$1,133 51
2 Allegheny	66,941 15	1,051,385 85	1,118,327 00	167,071 04	510,964 08	341,481 54	1,019,516 66	33,000 43	1,213,992 96
3 Armstrong......	10,480 08	87,854 00	98,334 08	22,949 37	47,711 68	21,068 53	91,729 58	10,596 61	22,587 40
4 Beaver..........	7,795 70	74,899 29	82,694 99	13,993 63	41,196 12	22,155 49	77,345 24	7,674 32	37,873 09
5 Bedford.........	7,143 83	52,835 83	59,979 66	5,257 65	35,757 90	14,575 37	52,590 92	7,496 49	1,335 66
6 Berks...........	26,359 39	235,260 09	261,619 48	53,361 95	125,647 87	71,521 52	250,531 34	12,137 66	73,143 46
7 Blair............	10,297 79	82,988 17	93,285 96	12,094 64	51,854 01	28,977 10	92,925 75	6,216 15	17,588 32
8 Bradford	12,539 85	89,702 03	102,241 88	13,137 74	55,574 68	24,978 15	93,690 57	9,384 03	20,944 75
9 Bucks...........	15,722 41	148,635 72	164,358 13	36,387 32	86,309 47	34,410 31	157,107 10	13,199 22	26,061 05
10 Butler	10,918 33	71,041 00	81,959 33	13,131 06	44,279 28	17,203 52	74,613 86	12,825 04	17,293 85
11 Cambria	8,243 80	77,754 18	85,997 98	16,852 30	43,082 15	14,984 09	74,918 54	13,933 59	21,555 41
12 Cameron........	1,360 46	8,638 34	9,998 80	1,787 56	8,388 75	2,325 58	12,501 89	7,040 77	51 62
13 Carbon	7,238 12	76,890 39	84,128 51	11,014 37	39,314 50	26,552 71	76,881 58	4,486 48	46,678 79
14 Centre	8,149 54	67,452 41	75,601 95	10,714 62	39,738 66	19,913 28	70,366 56	14,889 47	27,309 98
15 Chester	18,496 76	200,160 62	218,657 38	31,318 46	111,120 10	57,242 09	199,680 65	16,351 11	71,462 48
16 Clarion..........	7,155 95	57,203 38	64,359 33	11,178 81	29,651 04	12,081 57	52,911 42	12,523 25	7,601 71
17 Clearfield	7,266 38	55,566 22	62,832 60	8,648 50	38,619 00	16,373 66	63,641 16	25,605 97	26,496 20
18 Clinton..........	6,540 18	47,955 60	54,495 78	5,666 63	30,288 29	16,632 46	52,587 38	9,358 37	14,317 93
19 Columbia........	6,397 97	62,849 06	69,247 03	9,846 68	35,746 13	16,640 33	62,233 14	5,234 89	14,970 77
20 Crawford........	19,304 42	151,342 31	170,646 73	21,616 35	74,913 95	56,920 06	153,450 36	16,906 20	97,255 77
21 Cumberland	12,017 56	93,545 74	105,563 30	12,165 20	59,845 88	23,671 02	95,682 10	11,660 02	19,443 26
22 Dauphin	16,330 60	193,476 12	209,806 72	41,255 89	97,354 84	63,012 54	201,623 27	9,082 64	119,809 26
23 Delaware	9,355 74	152,646 82	162,002 56	34,067 82	64,404 80	53,017 28	151,489 90	8,405 38	50,314 88
24 Elk	2,189 53	22,218 54	24,408 07	4,048 42	15,988 75	4,042 56	24,079 73	13,934 20	....
25 Erie	17,757 26	189,384 82	207,142 08	37,901 20	93,401 32	43,493 60	174,796 12	12,930 62	54,145 50
26 Fayette..........	11,545 41	88,197 60	99,743 01	14,092 20	50,039 01	25,343 44	89,474 65	11,560 13	43,408 94
27 Forest...........	608 57	13,657 57	14,266 14	1,820 03	6,692 00	2,040 04	10,552 07	3,744 07	258 90

28 Franklin........	10,753 65	80,236 78	90,990 43	8,668 85	52,669 62	23,723 29	85,061 76	5,247 30	21,428 41
29 Fulton..........	2,472 05	10,843 42	13,315 47	1,692 60	8,738 99	1,844 23	12,275 82	1,254 74	82 23
30 Greene..........	5,471 59	43,915 81	49,387 40	7,093 41	27,465 46	7,748 73	42,307 60	9,955 94	726 95
31 Huntingdon	6,858 37	58,230 33	65,088 70	6,499 34	36,793 71	13,591 28	56,884 33	4,978 11	4,566 23
32 Indiana.........	9,276 14	64,034 99	73,311 13	7,516 49	41,708 43	21,437 34	70,662 26	16,198 02	7,910 99
33 Jefferson...	6,462 91	40,133 30	46,596 21	8,896 01	24,351 76	6,385 56	39,633 33	11,230 39	2,251 18
34 Juniata	4,122 13	27,199 41	31,321 54	4,159 25	16,976 12	7,683 49	28,818 86	3,532 81	1,064 74
35 Lancaster.	31,521 00	296,667 37	328,188 37	80,604 40	157,510 92	59,430 32	297,545 64	29,420 77	96,899 32
36 Lawrence.......	6,582 26	51,204 32	57,786 58	8,429 06	34,197 32	12,362 94	54,989 32	5,712 49	2,831 85
37 Lebanon........	8,491 73	87,753 77	96,245 50	21,178 71	44,033 56	25,561 28	90,773 55	3,932 25	37,963 35
38 Lehigh..........	17,172 59	190,215 08	207,387 67	17,485 39	78,889 92	97,011 18	193,386 49	11,776 76	433,263 36
39 Luzerne.........	48,486 00	425,499 39	473,985 39	70,836 56	245,071 33	122,758 07	438,665 96	78,675 49	88,947 96
40 Lycoming.......	12,137 85	120,307 51	132,445 36	21,000 57	62,897 53	39,992 73	123,890 83	8,842 99	39,677 91
41 M'Kean.........	2,307 30	25,040 59	27,347 89	3,250 29	12,436 09	7,402 42	23,088 80	8,513 77	7,764 12
42 Mercer..........	13,279 67	53,827 22	67,106 89	25,729 96	61,074 19	25,133 88	111,938 03	21,634 70	13,693 57
43 Mifflin	3,613 98	35,616 46	39,230 44	3,603 81	19,787 66	12,621 92	36,013 39	4,293 51	26,449 35
44 Monroe..........	4,667 90	26,196 98	30,864 88	3,821 03	18,935 15	5,975 92	28,732 10	4,070 32	1,680 51
45 Montgomery....	20,104 41	208,378 94	228,483 35	43,607 45	106,478 81	59,881 22	209,967 48	18,851 27	64,900 34
46 Montour.	3,263 31	29,187 32	32,450 63	4,178 60	17,585 01	9,269 54	31,033 15	1,047 36	18,091 38
47 Northampton....	15,044 23	216,174 84	231,219 07	21,705 69	92,238 59	80,952 93	194,897 21	11,167 33	137,470 26
48 Northumberl'd,	12,548 41	81,730 15	94,278 56	14,963 72	54,330 56	21,405 72	90,700 00	14,994 58	12,094 90
49 Perry	7,194 79	49,121 76	56,316 55	8,436 49	27,468 07	15,617 80	51,522 36	6,799 65	9,184 50
50 Pike	2,231 34	10,760 32	12,991 66	2,522 95	6,549 68	2,944 27	12,016 90	98 04	4,048 77
51 Potter.	2,720 59	24,878 22	27,598 81	5,088 62	14,546 81	4,709 93	24,345 36	11,221 20	1,453 32
52 Schuylkill	27,216 93	327,924 26	355,141 19	70,425 66	182,534 70	82,670 17	335,630 53	69,596 03	97,620 45
53 Snyder	3,755 46	30,162 02	33,917 48	11,195 73	15,054 55	5,154 53	31,404 81	4,086 51	4,043 79
54 Somerset........	7,195 14	46,007 30	53,202 44	8,416 15	30,779 92	7,821 08	47,017 15	7,781 93	1,660 75
55 Sullivan	1,475 21	10,643 80	12,119 01	1,847 90	7,145 86	1,629 42	10,623 18	2,987 29	....
56 Susquehanna....	9,975 14	56,078 97	66,054 11	11,115 33	38,448 67	11,649 71	61,213 71	7,418 22	5,441 95
57 Tioga...........	9,759 70	76,191 69	85,951 39	16,960 16	43,355 52	31,033 28	91,348 96	11,825 32	43,837 04
58 Union..........	3,714 35	27,735 32	31,449 67	3,378 87	18,562 81	4,896 38	26,838 06	4,908 70	1,032 90
59 Venango	7,655 45	110,814 52	118,469 97	15,176 15	65,887 54	31,941 59	113,005 28	15,638 30	51,038 63
60 Warren.........	6,260 90	58,383 70	64,644 60	8,063 09	36,571 62	12,780 54	57,415 25	10,766 30	10,464 28
61 Washington.....	10,708 55	97,517 87	108,226 42	14,544 55	65,161 86	18,440 60	98,147 01	12,163 86	9,590 28
62 Wayne..........	7,970 00	44,885 04	52,855 04	8,990 65	28,983 78	10,938 18	48,912 61	5,188 99	1,777 73
63 Westmoreland..	15,875 74	134,400 69	150,276 43	27,483 82	77,325 13	22,117 65	126,926 60	21,858 56	17,189 89
64 Wyoming.......	4,465 18	19,859 97	24,325 15	3,171 34	13,375 65	4,128 39	20,675 38	4,595 72	1,246 42
65 York...........	19,095 31	125,082 05	144,177 36	23,060 62	76,794 96	33,518 58	133,374 16	12,926 17	33,917 77
	728,207 19	6,918,811 03	7,647,018 22	1,245,387 23	3,826,987 12	2,006,833 88	7,079,208 23	803,509 74	3,360,742 83
66 Philadelphia....	....	....	....	489,761 64	1,029,901 79	465,057 02	1,984,720 45	....	....
	....	....	....	1,735,148 87	4,856,888 91	2,471,890 90	9,063,928 68	....	....

STATEMENT SHOWING STATISTICS OF CITIES AND BOROUGHS HAVING FIVE THOUSAND INHABITANTS AND UPWARDS.

Cities and Boroughs.	Population according to the late census	SCHOOLS.		TEACHERS.				SCHOLARS.					TAX AND RATE PER CENT.			RECEIPTS AND EXPENDITURES.		
		Whole number of schools,	Average number months taught	No. of male teachers	No. of female teachers	Average salaries of male teachers per month	Average salaries of female teachers per month	Number of pupils attending school	Percentage of population attending school	Average number scholars attending school	Average percentage of attendance	The cost of teaching each scholar per month	No. mills on dollar levied for school purposes	No. mills on dollar levied for building purposes	Total amount of tax levied for school and building purposes	Total receipts	Total expenditures	Value of school property
Allegheny	53,180	178	10	14	178	$141 70	$51 13	9,129	19	7,879	90	$1.52	2.	2.	$217,865 01	$286,159 23	$284,108 55	$984,000 00
Allentown	13,884	54	10	12	43	62 50	33 25	3,527	25	2,211	84	.70	3.	1.50	51,124 50	105,501 20	104,158 16	415,000 00
Altoona	10,610	38	9	11	27	57 05	41 98	2,082	19	1,639	79	.96	10.	2.	25,377 63	37,038 14	37,093 08	73,000 00
Ashland	5,714	15	10	4	12	92 50	36 50	1,511	26	809	86	.59	8.	......	10,358 21	12,072 07	12,163 22	41,500 00
Carbondale	6,393	15	9	5	15	72 72	33 66	1,965	30	1,041	83	.47	10.	3.	12,277 97	15,031 06	14,941 46	32,000 00
Carlisle	6,650	20	10	8	13	61 25	37 00	974	15	875	82	1.00	10.	......	10,796 18	11,951 07	11,615 51	30,000 00
Chambersburg	6,308	22	9	5	17	63 50	39 70	1,241	19	835	83	.91	7.	1.	12,558 85	15,467 39	13,549 41	30,000 00
Chester	9,485	31	10	1	37	100 00	46 41	1,757	19	1,291	86	1.06	3.50	1.50	35,595 25	53,985 97	54,343 76	....
Columbia	6,461	19	9	6	14	70 68	38 79	1,120	18	930	83	.98	3.	......	11,415 70	13,969 13	10,759 91	24,500 00
Corry	6,859	19	9	1	20	166 66	32 66	1,000	15	653	83	1.03	6.75	5.	19,322 38	23,010 08	18,247 69	31,406 00
Danville	8,436	30	7⅞	7	24	66 53	31 96	1,765	20	1,167	79	.83	9.	5.	17,713 80	17,569 72	17,503 78	75,000 00
Easton	10,987	40	10	17	28	78 53	46 50	2,271	22	1,590	86	1.29	3.50	2.	55,000 00	81,200 00	52,913 55	242,000 00
Erie	19,646	76	10	11	65	77 00	37 00	4,057	20	2,542	92	.85	2.50	2.	76,841 21	88,993 61	81,501 75	299,800 00
Harrisburg	23,104	72	10	27	68	67 96	44 85	5,418	23	3,279	64	1.10	10.	3.	76,594 11	101,062 52	99,681 54	403,880 00
Hazleton	....	21	10	3	18	83 33	36 67	1,405	......	897	90	.79	13.	13.	19,046 26	19,782 25	18,647 92	53,000 00
Hyde Park	....	17	10	4	33	73 75	37 33	3,185	......	1,694	78	.49	10.	5.	17,253 16	20,045 82	20,496 59	30,000 00
Johnstown	6,028	23	8	3	21	83 33	39 18	1,467	21	1,034	91	.88	10.	5.	13,757 39	15,929 49	16,176 55	100,000 00
Lancaster	20,233	58	10	7	52	76 38	36 23	3,114	16	2,348	84	.86	3.	1.	51,000 00	87,217 60	71,253 93	143,000 00
Lebanon	6,727	32	9	11	21	59 18	31 66	1,281	19	1,189	92	1.28	10.	2.50	19,873 59	27,006 59	27,174 22	65,800 00
Lock Haven	6,986	26	7	9	18	54 45	41 39	1,443	20	896	84	1.04	12.	7.	16,547 56	17,124 31	17,119 50	....
Mahanoy	5,533	16	10	5	11	70 00	36 83	1,504	27	870	89	.56	7.	......	9,819 77	11,121 86	10,085 98	....
Meadville	7,103	23	9	.....	23	....	45 00	1,388	20	1,009	73	1.09	4.50	3.50	22,875 42	27,052 41	26,058 27	80,000 00
New Castle	6,164	25	6	2	26	150 00	43 46	1,511	24	1,297	86	1.14	10.	1.	12,867 93	11,398 91	13,137 45	31,000 00
Norristown	10,753	38	10	4	34	85 00	40 25	2,303	21	1,400	87	.94	6.	1.50	31,426 00	39,382 32	36,927 65	116,400 00
Philadelphia	674,022	....	10	77	1,801	....	....	99,552	16	82,975	......	......	......	.....	....	....	....	6,004,038 00
Pittsburg	86,076	413	10	52	367	166 50	52 00	21,488	25	14,500	71	1.07	1.75	......	525,299 80	568,542 36	496,879 64	1,874,900 00
Pittston	6,760	20	9	3	17	75 00	39 00	1,477	21	814	80	.64	12.	6.	12,903 50	13,584 90	13,569 18	....
Phœnixville	5,292	22	9	2	20	93 60	35 50	1,513	26	980	85	.67	4.	1.50	16,616 39	25,728 18	25,741 24	47,000 00
Pottsville	12,384	55	10	7	48	99 15	36 53	2,395	19	1,879	88	1.06	5.	1.50	41,425 70	73,739 85	68,470 97	180,000 00
Reading	33,930	131	10	6	126	95 00	37 00	6,345	19	4,850	81	.80	12.	3.	83,676 56	130,274 57	128,787 55	299,000 00
Scranton	35,092	45	10	5	58	100 00	40 00	3,816	......	2,476	88	.92	13.	7.	56,923 80	68,852 55	61,126 95	180,000 00
Shenandoah	....	22	7⅔	5	17	65 00	30 00	2,189	......	1,228	75	.39	5.	5.	16,616 04	24,088 17	24,012 18	50,000 00
St. Clair	5,726	12	9	4	8	69 75	34 62	956	18	759	82	.64	7.	2.	7,450 56	7,558 33	7,530 30	30,000 00
Tamaqua	5,960	16	10	3	14	93 33	31 79	1,649	29	949	83	.48	6.	......	11,163 09	11,579 13	10,690 05	40,000 00
Titusville	8,659	24	10	1	30	40 00	54 04	1,760	20	1,117	88	1.00	......	15.	25,037 40	45,429 71	38,563 37	100,000 00
West Chester	5,630	19	10	1	20	70 00	48 36	916	17	539	88	1.37	2.	......	12,314 00	14,205 87	13,538 74	25,000 00
Wilkesbarre	10,174	26	10	4	24	102 50	53 33	1,614	16	1,055	89	1.22	9.	6.	34,965 02	37,570 85	34,203 68	10,000 00
Williamsport	16,030	54	8	13	44	61 92	46 47	3,503	20	2,165	84	.98	10.	9.	49,094 34	52,548 78	50,326 45	125,000 00
York	11,003	42	9	10	32	58 50	42 34	2,382	20	1,733	88	.97	3.	......	22,325 03	32,615 15	32,191 98	125,000 00

STATEMENT OF THE SCHOOL SYSTEM SINCE ITS ESTABLISHMENT UNDER THE PRESENT LAW.

Year	Whole number of districts	Number of districts paid	Whole number of schools	Number of schools yet required	Time schools were open	Whole number of teachers	Average salaries of male teachers per month	Average salaries of female teachers per month	Whole number of scholars	Average number of scholars attending school	Average number in each school	Average cost of teaching each scholar per month	State appropriations paid	Tax levied	Number of mills on dollar levied for school purposes	Number of mills on dollar levied for building purposes	Received from collector	Expenses for school houses	Cost of instruction	Fuel and contingencies
1854	1.425	....	10,186	......	5 m. 2d.	11,967	$20 31	$12 81	488,692	....	38	41	$156,389 25	$1,167,119 32	......	......	....	$256,735 92	....	....
1855	1,445	....	10,469	650	5 "	12,143	22 29½	14 89½	529,009	361,316	49	45	159,554 17	1,401,300 15	......	......	$1,127,992 61	266,198 76	$1,041,571 96	$110,383 19
1856	1,610	....	10,697	633	5 " 1	12,357	23 29	15 85¾	523,754	365,103	48	48	164,330 50	1,693,844 15	5.5	3.25	1,371,706 14	332,125 37	1,145,730 32	140,615 29
1857	1,677	....	10,956	604	5 " 1	12,484	24 00	16 69	514,247	381,326	49⅛	49	164,723 55	1,880,143 07	5.72	3.3	1,534,732 32	444,285 56	1,137,357 92	172,572 01
1858	1,709	....	11,281	587	5 " 8	12,828	24 25	17 22	569,880	387,139	50½	46⅓	188,646 00	2,009,437 00	5.71	3.46	1,554,780 64	454,343 53	1,325,992 65	162,670 98
1859	1,755	....	11,485	523	5 " 10	13,058	24 26	17 79	575,251	375,687	50⅛	48	186,841 12	2,039,648 06	5.53	3.17	1,621,379 00	531,413 85	1,404,159 35	167,721 08
1860	1,766	1,711	11,577	494	5 " 10½	13,003	24 20	18 11	585,669	366,961	50⅛	51	193,503 34	2,015,785 20	5.43	3.35	1,639,383 23	448,446 28	1,442,171 70	209,956 38
1861	1,788	1,741	11,910½	466	5 " 12	14,297	25 68	19 71	596,765	384,752	50⅛	53	209,813 97	2,108,487 44	3.25	5.40	1,783,114 48	496,124 67	1,436,063 00	223,497 39
1862	1,808	1,750	11,990	445½	5 " 10	14,380	23 81	18 55	615,087	388,063	51⅓	49	210,752 40	1,965,164 91	4.75	3.47	1,756,307 38	355,796 90	1,367,181 33	232,337 31
1863	1,820	1,757	12,161	362	5 " 9	14,442	23 94	18 56	634,499	397,722	52	50	211,784 60	1,980,474 26	4.90	3.03	1,797,347 36	394,767 35	1,498,040 01	250,556 52
1864	1,825	1,755	12,566	446½	5 " 12	14,668	25 42	20 16	637,785	399,522	50¾	58	216,087 03	2,143,348 20	5.09	3.27	2,016,310 17	488,517 69	1,698,664 01	309,227 30
1865	1,837	1,735	12,547	420	5 " 14	14,286	31 82	24 21	629,587	396,701	50	68	210,134 08	2,437,640 37	5.89	3.63	2,318,069 18	374,459 97	1,990,777 83	410,246 26
1866	1,863	1,800	12,773½	509	5 " 15	14,841	34 34	26 31	649,519	413,049	51	72	233,463 67	3,013,057 33	6.56	4.53	2,801,759 32	596,669 69	2,211,521 70	458,317 61
1867	1,889	1,833	13,061	......	5 " 16¾	15,209	35 87	27 51	660,165	414,537	50½	85	239,813 19	3,616,285 23	7.25	5.04	3,489,237 31	985,152 55	2,482,512 93	601,087 21
1868	1,918	1,845	13,284½	......	5 " 19½	15,504	37 38	28 76	666,316	438,323	50	90	218,521 87	4,016,919 12	7.53	5.51	4,314,028 52	1,357,726 99	2,619,109 93	642,218 88
1869	1,971	1,921	13,558½	......	5 " 20½	15,670	38 18	29 89	686,769	477,775	50½	93	307,718 00	4,438,946 66	7.63	6.30	5,068,316 72	1,194,860 21	2,819,444 00	727,624 05
1870	2,001	1,941	13,832	......	5 " 21	16,097	39 63	30 55	695,052	484,912	50⅓	93	321,200 00	4,731,049 86	7.76	5.39	5,684,997 51	2,560,137 42	3,010,690 33	807,713 82
1871	2,023	1,945	14,161⅓	......	5 " 21⅓	16,842	40 03	31 12	700,040	495,632	49½	98	318,451 34	5,016,801 73	7.71	5.58	6,023,451 65	3,006,194 41	3,183,418 86	799,275 48
1872	2,029	1,950	14,415½	......	6 " 22	16,784	40 55	31 96	699,802	464,127	48½	99	429,152 65	5,229,024 69	7.27	5.06	5,438,656 89	2,535,637 39	3,221,121 78	863,738 96
1873	2,050	1,988	14,675½	......	6 " 6⅞	17,459	41 58	32 44	694,096	439,393	47⅓	95	475,322 71	5,543,985 23	7.5	4.3	6,671,949 93	1,477,831 00	3,424,979 91	*1,756,111 73
1874	2,079	2,010	14,978½	......	6 " 8⅛	17,664	41 88	33 33	716,728	468,309	47⅞	93	521,345 13	5,787,833 95	7.55	5.02	6,808,917 69	1,600,131 62	3,596,094 47	*1,652,651 94
1875	2,089	1,847	15,315½	......	6 " 19	18,104	40 03	31 03	740,094	472,283	48⅓	92	536,625 13	5,983,004 90	6.33	4.14	7,247,293 63	1,722,103 54	3,755,399 63	*1,961,341 60
1876	2,103	1,825	15,619	......	6 " 19	18,314	38 72	30 42	749,314	495,743	47⅓	91	728,207 19	6,003,443 31	6.27	3.89	6,918,811 03	1,245,387 23	3,826,987 12	*2,006,833 88

* Includes fees of collectors and treasurers, salaries to secretaries, debt and interest, and all other expenses.

SOLDIERS' ORPHAN SCHOOLS.

The number of children under the care of the State on the first day of September, 1876, was 2,641. On the first day of the same month, 1875, it was 2,695, the decrease being only 54; 944 were discharged during tho year, but the number of admissions nearly equaled the number of discharges. This circumstance was mainly occasioned by the act providing for the admission into the schools of children born since the first of January, 1866, and of the children of sick and disabled as well as deceased soldiers. Had the original act remained in force 422 children now in school would have been excluded, and the whole number of orphans in the care of the State would have been reduced to 2,219. It should be added also that the "hard times" have had considerable influence in keeping up the number of children in the schools.

The system cost, the past year, $402,530 27. The cost for 1875, was $423,693 76. The expenditures exceeded the appropriation by $2,530 27, but fortunately there was a balance from the preceding year, out of which this excess could be paid.

The following are the usual tabular statements, giving the statistics of the system and showing its working during the past year:

Number of institutions in which there are soldiers' orphans,	29
Reduction in the number since 1871	15
Number of orphans in schools and homes, May 31, 1876	2,729
Number admitted on order from May 31, 1875, to September 1, 1876	813
Number of discharges from May 31, 1875, to September 1, 1876	944
Number of orphans in charge of the State, Sept. 1, 1876	2,641
Number of orders of admission issued since system went into operation	9,003
Number of orphans admitted since system went into operation	8,580
Number of applications now on file	58
Probable number of orphans that will be cared for under the system	9,500
Cost of system for the past year	$402,530 27
Whole cost of the system since going into operation, as shown by the several annual reports to May 31, 1876	4,840,756 31
Appropriation made but unexpended	380,000 00
Probable amount of future appropriations that will be needed	1,000,000 00

GENERAL FINANCIAL STATEMENT.

This statement shows the exact financial condition of the Department at the end of the school year.

The moneys placed at the disposal of the Department for the year ending May 31, 1876, were as follows:

State appropriation	$400,000 00	
Unexpended balance for 1875	71,125 63	
		$471,125 63
Expended for education, maintenance and clothing	$384,928 09	
For soldiers' orphans at normal schools	7,261 68	
For out-door relief and by special act for Mrs. Mary A. Ketler	1,586 04	
Expenses of Department	8,754 46	
		402,530 27
Balance in Treasury to the credit of Department		68,595 36

As a matter of interest I append to the foregoing statement a list of the appropriations made by the State and the public donations received for the support of our orphan school system since its first establishment, and also one showing the expenditures of the system as exhibited in the several annual reports.

APPROPRIATIONS.

WHEN MADE.	CHARACTER.	AMOUNT.
March 23, 1865	Regular	$75,000 00
April 11, 1866	Regular	300,000 00
April 11, 1867	Regular	350,000 00
Feb. 25, 1868	Deficit	31,069 77
Feb. 25, 1868	Deficit	141,561 69
April 11, 1868	Regular	400,000 00
March 13, 1869	Deficit	50,000 00
April 14, 1869	Damages, Orangeville	5,000 00
April 16, 1869	Regular	450,000 00
March 31, 1870	Deficit	44,968 88
March 31, 1870	Deficit	44,700 00
April 6, 1870	Regular	520,000 00
May 27, 1871	Damages, Orangeville	5,000 00
May 27, 1871	Damages, Jacksonville	5,000 00
May 27, 1871	Regular	520,000 00
April 3, 1872	Regular	480,000 00
April 9, 1873	Regular	460,000 00
May 14, 1874	Regular	440,000 00
April 12, 1875	Regular	400,000 00
May 13, 1876	Regular	380,000 00
Amount of appropriations by the State		5,102,298 34

DONATIONS.

WHEN MADE.	BY WHOM.	AMOUNT.
May 6, 1864	Pennsylvania railroad company	$50,000 00
June 5, 1865	Legal Association of Penn'a, Washington, D. C.	85 06
June 5, 1865	A Philadelphia teacher	3 00
Amount of donations		50,088 06
Total amount		5,152,386 40

If to this grand sum be added the amounts donated by individuals directly to the schools and homes for the use of orphans, it would swell the amount many thousands of dollars.

ANNUAL EXPENDITURES.

The amounts expended in support of the soldiers' orphan schools, as shown by the several reports, have been as follows :

From the commencement to November 30, 1865	$103,817 66
From December 1, 1865, to November 30, 1866	321,270 42
From December 1, 1866, to November 30, 1867	435,080 44
From December 1, 1867, to May 31, 1868	236,970 26
From June 1, 1868, to May 31, 1869	500,971 62
From June 1, 1869, to May 31, 1870	514,126 42
From June 1, 1870, to May 31, 1871	509,037 66
From June 1, 1871, to May 31, 1872	475,245 47
From June 1, 1872, to May 31, 1873	467,132 84
From June 1, 1873, to May 31, 1874	450,879 49
From June 1, 1874, to May 31, 1875	423,693 76
From June 1, 1875, to May 31, 1876	402,530 27
	4,840,756 31

The appropriations made by the Legislature for the five years the orphan schools have been in the hands of the present administration amount to $2,300,000, and the expenditures to $2,219,481 83, leaving a balance unexpended of $80,518 17.

STATISTICS OF ORPHAN SCHOOLS AND HOMES.

SCHOOLS.

SCHOOL.	COUNTY.	PRINCIPAL.	Orders issued....	Number admitted on order...	Number transferred to.......	Total No. rece'd into school.....	Number transferred from....	Number disch'd on age.........	Number disch'd on order.......	Number died....	NO. IN SCHOOL MAY 31, 1876.		
											Males.....	Females ..	Total both sexes ....
1. Andersonburg	Perry	W. H. Hall	235	180	18	198	38	46	14	5	53	42	95
2. Bridgewater	Bucks	J. Stitzer	236	215	28	243	3	105	33	24	43	35	78
3. Chester Springs	Chester	Mrs. E. H. Moore	283	240	337	577	34	281	83	3	108	68	176
4. Dayton	Armstrong	H. M'Candless	411	360	162	522	17	273	52	3	98	79	177
5. Harford	Susquehanna	H. S. Sweet	435	381	125	506	25	247	53	13	96	72	168
6. Industrial School	Philadelphia	J. F. Woods	6	4	23	27	4	13	4	2	......	4	4
7. Lincoln Institution	Philadelphia	Miss M. M'Henry, Dir's,	196	173	46	219	16	69	36	5	93	......	93
8. Mansfield	Tioga	F. A. Allen	396	358	92	450	4	207	41	4	113	81	194
9. M'Alisterville	Juniata	Ira Wentzel	590	508	243	751	112	311	140	17	89	82	171
10. Mercer	Mercer	Geo. W. Wright	462	402	95	497	13	145	25	3	159	152	311
11. Mount Joy	Lancaster	J. Kennedy	557	490	273	763	79	319	112	5	146	102	248
12. Philipsburg	Beaver	W. G. Taylor	440	361	248	609	99	233	115	4	85	73	158
13. Soldiers' Orphan Inst. in connection with Northern Home	Philadelphia	Mrs. E. E. Hutter, Pres.	659	611	29	640	87	123	121	9	185	115	300
14. Uniontown	Fayette	A. H. Waters	361	317	134	451	10	197	92	4	96	52	148
15. White Hall	Cumberland	J. Dum	426	368	281	649	24	262	133	13	145	72	217
16. Schools discontinued			2,539	2,190	406	2,596	1,615	512	429	40	......	......	......
17. Partial relief, and other cases			......	631	......	631	......	575	11	2	21	22	43
			8,232	7,789	2,540	10,329	2,180	3,918	1,494	156	1,530	1,051	2,581

STATISTICS OF ORPHAN SCHOOLS AND HOMES—CONTINUED.

HOMES.

HOMES.	LOCATION.	Orders issued...	Number admitted on order ...	Number transferred to.......	Total No. recei'd into school.....	Number transferred from....	Number disch'd on age	Number disch'd on order.......	Number died ...	NO. IN SCHOOL MAY 31, 1876.		
										Males	Females ..	Total both sexes ....
1. Catholic Home	Philadelphia	34	27	2	29	2	12	13	1	.....	1	1
2. Children's Home	York	99	77	4	81	51	6	8	....	6	10	16
3. Church Home	Philadelphia	55	44	11	55	14	15	14	1	.....	11	11
4. Home for Friendless	Lancaster	198	169	18	187	149	7	15	6	3	7	10
5. Loysville Orphan Home	Perry	272	220	37	257	161	20	15	2	42	17	59
6. Orphan's Farm School	Zelienople, Butler co,	4	4	.....	4	1	2	.....	....	1	.....	1
7. Orphan's Home	Germantown	71	62	11	73	57	1	12	....	1	2	3
8. Orphan's Home	Rochester	7	7	.....	7	.....	4	.....	....	1	2	3
9. Orphan's Home	Womelsdorf	122	110	15	125	45	38	25	1	7	9	16
10. St. John's Orphan Asylum	Philadelphia	59	48	5	53	5	10	32	5	1	.....	1
11. St. Paul's Orphan Home	Butler	51	50	7	57	4	17	14	1	13	8	21
12. St. Vincent's Asylum	Tacony, Philadelphia,	17	16	.....	16	.....	9	6	....	1	.....	1
13. St. Vincent's College	Westmoreland	4	2	8	10	3	6	.....	....	1	.....	1
14. Training School for Feeble Minded Children,	Delaware	6	4	8	12	1	6	1	....	3	1	4
		999	840	126	966	493	153	155	17	80	68	148
		8,232	7,789	2,540	10,329	2,180	3,918	1,494	156	1,530	1,051	2,581
		9,231	8,629	2,666	11,295	2,673	4,071	1,649	173	1,610	1,119	2,729

THE CENTENNIAL.

THE CENTENNIAL INTERNATIONAL EXHIBITION.

In our report for 1873, was published a general statement as to the plans and prospects of the Centennial Exhibition, and it is now a pleasant task to report the great work completed to the satisfaction of all. The State of Pennsylvania may with justice claim the *first honors* in this wonderful enterprise, her means were furnished without stint, not only to aid in the Exhibition itself but also to commemorate forever the national anniversary. To the citizens of Philadelphia must also be given special credit for the noble manner in which they responded to the many calls made upon their time and money. The Exhibition itself has been an entire success in every respect and was the means of bringing together a larger variety of exhibits from a greater number of nations than any former world's fair. The buildings were completed in time and the Exhibition opened in complete running order upon the day specified. The exhibitors and attendance of visiting was only surpassed in *one instance*—Paris, 1867, where the fact of the Exhibition being open on Sunday led to a small increase. The selection of judges secured a class of men, many of them skilled as experts and thus no complaint could be found with the awards, of which, our own people had a large proportion. The space allotted for this report only admits of a record of the organization of this great work in which the State of Pennsylvania had so large a share.

UNITED STATE CENTENNIAL COMMISSION.

STATES AND TERRITORIES.	Commissioners.	Alternate.
Alabama	Richard M. Nelson, Selma	James L. Cooper, Huntsville.
Arizona	Richard C. M'Cormick, Washington, D. C.	John Wasson, Tucson.
Arkansas	Geo. W. Lawrence, Hot Springs,	Geo. E. Dodge, Little Rock.
California	J. Dunbar Creigh, San Francisco	Benj. P. Kooser, Santa Cruz.
Colorada	J. Marshall Paul, Fair Play	N. C. Meeker, Greeley.
Connecticut	Joseph R. Hawley, Hartford	Wm. P. Blake, New Haven.
Dakota	John A. Burbank, Springfield,	Solomon L. Spink, Yankton.
Delaware	John K. Kane, Wilmington	John H. Rodney, New Castle.
Dist. of Columbia	James E. Dexter, Washington,	Lawrence A. Gobright, Washington.

UNITED STATES CENTENNIAL COMMISSION—CONTINUED.

STATES AND TERRITORIES.	Commissioners.	Alternates.
Florida............	T. W. Osborn, New York.......	J. T. Bernard, Tallahassee.
Georgia............	George Hillyer, Atlanta........	Richard Peters, Jr., Atlanta.
Idaho..............	Thomas Donaldson, Boise City,	Christopher W. Moore, Boise City.
Illinois............	Frederick L. Matthews, Carlinville........................	Lawrence Weldon, Bloomington.
Indiana............	John L. Campbell, Grawfordsville........................	Franklin C. Johnson, New Albany.
Iowa	Robert Lowry, Davenport......	Coker F. Clarkson, Eldora.
Kansas	John A. Martin, Atchison......	Geo. A. Crawford, Fort Scott.
Kentucky	Robert Mallory, LaGrange.....	Smith M. Hobbs, Mount Washington.
Louisiana	John Lynch, New Orleans......	Edward Penington, Philadelphia.
Maine..............	Joshua Nye, Agusta............	Charles H. Haskell, Bangor.
Maryland...........	John H. B. Latrobe, Baltimore..	Samuel M. Shoemaker, Baltimore.
Massachusetts......	George B. Loring, Salem.......	William B. Spooner, Boston.
Michigan...........	V. P. Collier...................	Claudius B. Grant Houghton.
Minnesota..........	J. Fletcher Williams, St. Paul,	W. W. Folwell, Minneapolis.
Mississippi.........	O. C. French, Jackson..........	M. Edwards, Gholson.
Missouri...........	John M'Neil, St. Louis.........	Samuel Hays, St. Louis.
Montana........ ...	Joseph P. Woolman, Helena...	Patrick A. Largey, Virginia City.
Nebraska...........	Henry S. Moody, Omaha.......	R. W. Furnas, Brownsville.
Nevada.............	W. W. M'Coy, Eureka	James W. Haines, Genoa.
New Hampshire....	Ezekiel A. Straw, Manchester,	M. V. B. Edgerly, Manchester.
New Jersey.........	Orestes Cleveland, Jersey City,	John G. Stevens, Trenton.
New Mexico........	Eldridge W. Little, Santa Fe...	Stephen B. Elkins, Washington, D. C.
New York..........	N. M. Beckwith, New York City,	C. P. Kimball, New York City.
North Carolina.....	Samuel F. Phillips, Washington, D. C..................	Jonathan W. Albertson, Hertford.
Ohio...............	Alfred T. Goshorn, Cincinnati,	Wilson W. Griffith, Toledo.
Oregon.............	James W. Virtue, Baker City..	Andrew J. Dufur, Portland.
Pennsylvania.......	Daniel J. Morrell, Johnstown..	Asa Packer, Mauch Chunk.
Rhode Island.......	George H. Corliss, Providence,	Royal C. Taft, Providence.
South Carolina.....	William Gurney, Charleston...	Archibald Cameron, Charleston.
Tennessee..........	Thomas H. Coldwell, Shelbyville........................	Wm. F. Prosser, Nashville.
Texas..............	William H. Parsons, New York,	John C. Chew, New York.
Utah...............	Wm. Haydon, Salt Lake City..	C. R. Gilchrist, Salt Lake City.
Vermont	Middleton Goldsmith, Rutland,	Henry Chase, Lyndon.
Virginia............	F. W. M. Holliday, Richmond,	Edmund R. Bagwell, Onancock.
Washington Ter'y..	Elwood Evans, Olympia.........	Alex. S. Abernethy, Cowlitz County.
West Virginia......	Alexander R. Boteler, Shepherdstown.....................	Andrew J. Sweeney, Wheeling.
Wisconsin..........	David Atwood, Madison.........	Ed. D. Holton, Milwaukee.
Wyoming..........	Joseph M. Carey, Cheyenne....	Robert H. Lamborn, Philadelphia.

OFFICERS OF THE CENTENNIAL COMMISSION.

President—Joseph R. Hawley.

Vice Presidents—Thomas H. Coldwell, Middleton Goldsmith, W. W. M'Coy, F. W. M. Holliday, Robert Mallory, John A. Martin.

Director-General—Alfred T. Goshorn.

Secretary—John L. Campbell.

Counsellor and Solicitor—John L. Shoemaker.

Executive Committee—Daniel J. Morrell, Chairman; Alfred T. Goshorn, George H. Corliss, Alexander R. Boteler, Richard C. M'Cormick, N. M. Beckwith, George B. Loring, John Lynch, Charles P. Kimball, J. H. B. Latrobe, David Atwood, Samuel F. Phillips, J. T. Bernard, J. R. Hawley, President, *ex-officio*; Myer Asch, Secretary.

Assistant Secretaries—Myer Asch, Dorsey Gardner.

Chiefs of Bureaus of Administration—Foreign—Director-General and Myer Asch. *Installation*—Henry Pettit. *Transportation*—Dolphus Torry. *Machinery*—John S. Albert. *Agriculture*—Burnet Landreth. *Horticulture*—Charles H. Miller. *Fine Arts*—John Sartain. *Medical*—William Pepper, M. D. *Awards*—Francis A. Walker.

THE CENTENNIAL BOARD OF FINANCE.

DIRECTORS.

John Welsh, Philadelphia; William Sellers, Philadelphia; John S. Barbour, Virginia; Samuel M. Felton, Philadelphia; Daniel M. Fox, Philadelphia; Thomas Cochran, Philadelphia; Clement M. Biddle, Philadelphia; N. Parker Shortridge, Philadelphia; James M. Robb, Philadelphia; Edward T. Steel, Philadelphia; John Wanamaker, Philadelphia; John Price Wetherill, Philadelphia; Henry Winsor, Philadelphia; Amos R. Little, Philadelphia; John O. James, Philadelphia; Thomas H. Dudley, New Jersey; A. S. Hewitt, New York; Wm. L. Strong, New York; John Cummings, Massachusetts; John Gorham, Rhode Island; Charles W. Cooper, Pennsylvania; William Bigler, Pennsylvania; Robert M. Patton, Alabama; John B. Drake, Illinois; George Bain, Missouri.

OFFICERS.

President—John Welsh, Philadelphia.

Vice Presidents—Thomas Cochran, Philadelphia; John S. Barbour, Virginia.

Secretary and Treasurer—Frederick Fraley, Philadelphia.

Auditor—H. Seymour, Lansing, Philadelphia.

Architects—H. J. Schwarzmann, Henry Pettit, J. M. Wilson, J. H. Windrim.

Chief Press Department—C. B. Norton.

Chief Admission Department—D. G. Yates.

FINANCE.

THIRD ANNUAL REPORT BOARD OF FINANCE.

Absract of the Treasurer's account from the first day of May, 1873, to the first day of April, 1876.

RECEIPTS.

CAPITAL STOCK.

Amount paid for installments by stockholders	$2,132,140 20

DONATIONS.

From various sources	53,808 60

WOMEN'S BUILDING FUND.

Donation for the erection of the Women's Building	31,161 46

MEDAL ACCOUNT.

For sale of medals		$15,118 72

MISCELLANEOUS RECEIPTS.

For interest on deposits	$27,677 78	
Water rents	2,752 37	
Sale of old materials, rents, transfers, etc	3,818 22	
		34,248 37

CONCESSION ACCOUNT.

On account of contracts for concessions	193,250 00

STATE OF PENNSYLVANIA.

Towards erection of Permanent Building	543,343 78

CITY OF PHILADELPHIA.

For the erection of Centennial Buildings	1,190,084 95

UNITED STATES.

On account of appropriation of February 16, 1876	500,000 00

TREASURER OF THE UNITED STATES.

Refunded for amount advanced for memorial certificates	24,500 00

TRANSPORTATION DEPARTMENT.

On account of terminal changes	5,407 17

TEMPORARY LOANS.

Amount borrowed	380,000 00
	5,103,063 25

PAYMENTS.

CENTENNIAL BUILDINGS AND GROUNDS.

On account of buildings and for grading, drainage and laying out grounds, water-works, gas mains, machinery, plans, salaries of engineers and architects, clerks, printing, advertising, stationery and all other charges incident to said buildings and grounds	$4,178,101 44

UNITED STATES CENTENNIAL COMMISSION.

For salaries, clerk hire, printing, advertising, plans and other charges,	246,229 01

CENTENNIAL BOARD OF FINANCE.

Salaries, clerk hire, rent, printing, advertising, stationery, commissions to agents, fire and police department, and other charges and expenses	196,596 96

MEMORIAL MEDALS.

For dies, bullion, coinage, cases, etc	22,898 55

TEMPORARY LOANS.

Paid on account of money borrowed	140,000 00

TREASURER OF THE UNITED STATES.

Advanced for engraving and printing memorial certificates	24,500 00
Balance on deposit in banks	294,425 76
Cash in office	311 53
	5,103,063 25

All of which is respectfully submitted.

JOHN WELSH, *President.*

FREDERICK FRALEY, *Secretary and Treasurer.*
April 19, 1876.

THE FOREIGN COMMISSIONS.

The Foreign Commissions are constituted as follows:

ARGENTINE REPUBLIC.

Ernesto Oldendorff, President, New York.

Edward Shippen, Vice-President, Philadelphia.

Carlos Carranza, New York.

Edward T. Davison, Treasurer, Consul-General, New York.

Diego de Castro, Secretary, New York.

E. Mara Davison, Deputy Member.

Central Committee.—Eduardo Olivera, Buenos Ayres; Onesimo Leguizamon, Buenos Ayres; Diego de la Fuente, Buenos Ayres; Lino Palcois, Buenos Ayres; Ricardo Newton, Buenos Ayres; Leonardo Pereyra, Buenos Ayres; Jose M. Jurafdo, Buenos Ayres; Emilio Duportal, Buenos Ayres; Julio Victorica, Secretary, Buenos Ayres.

AUSTRIA.

Rudolf Isbary, Vice-President of the Chamber of Commerce, President, Vienna.

Franz Ritter von Liebig, Member of the Chamber of Commerce, 1st Vice-President, Reichenberg.

Michael Matscheko, Manufacturer, 2d Vice-President, Vienna.

Dr. F. Migerka, Counsellor to the I. R. Austrian Ministry of Commerce, Commissioner-General, and Resident Commissioner, Philadelphia.

Members.—Eugene Felix, President of the Society of Arts, Vienna; Edward Kanitz, Member of the Chamber of Commerce, Vienna; Karl von Oberleitner, Member of the Chamber of Commerce, Mahr Schönberg; Otto von Bauer, Member of the Chamber of Commerce, Brunn; Ernst von Pontzen, Engineer, Vienna; Dr. Emil Hornig, Counsellor, Vienna; Theo. A. Havemeyer, Austro-Hungarian Consul-General, New York.

AFRICA—ORANGE FREE STATE.

Charles W. Riley, Consul-General, Philadelphia.

BELGIUM.

His Royal Highness the Comte de Flandre, Honorary President.

Baron Gustave de Woelmont, Senator, President, Brussels.

Alexander Robert, Historical Painter, Member of the Belgium Academy of Fine Arts, Letters and Sciences, Vice President, Brussels.

Ch. de Smet de Smet, Manufacturer, President of the Industrial and Commercial Society, Vice-President, Ghent.

J. Clerfeyt, Chief of Bureau, Ministry of the Interior, Secretary of the Upper Council of Industry and Commerce, late Secretary of the Belgium Commissions and Juries of the International Exhibitions of Paris, London, and Vienna, Secretary, Brussels.

Alfred Ancion, Manufacturer of Arms, Liege.

Jean Beco, Mining Engineer, Brussels.

A. J. Belpaire, Inspector-General of Railways and Telegraphs, Brussels.

L. De Curte, Architect, Member of the Royal Commission of Monuments and Council for the Improvement of the Arts of Design, Brussels.

Felix Duhayon, Lace Manufacturer, Judge of the Tribunal of Commerce, Brussels.

E. Duisberg, Director of the Paper Manufactories of Messrs. Godin & Co., at Huy, Huy.

Jos. Fayn, Mining Engineer, Consul of the Netherlands, Liege.

P. F. Ghys-Bruneel, Lace Manufacturer, Grammont.

Jules Havenith, Ship Owner, Consul of Austria-Hungary, Antwerp.

J. Kindt, Inspector-General of Industry, Ministry of the Interior, Brussels.

Eugene Meeus, Manufacturer, Member of the Chamber of Representatives, Antwerp.

Alph. Morel, Director of the Glass Works, Lodelinsart, Charleroi.

Henri Morel, Flax Manufacturer, Gand.

Remy Paquot, Director of the Company of Bleyberg, Montzen.

Edm. Parmentier, Manufacturer, Brussels.

Ferdinand Pauwles, Historical Painter, Antwerp.

Aug. Ronnberg, Director-General of Agriculture and Manufactures, Ministry of the Interior, Brussels.

E. Sadoine, Director-General of the Company "John Cockerill," Seraing-lez-Liege.

Jules Sauveur, Director-General of Public Instruction, Ministry of the Interiòr, Brussels.

E. E. A. Scharr, Chief Engineer, Director of the Arsenal and Railways of the State, Malines.

Alfred Simonis, Cloth Manufacturer, Member of the Chamber of Representatives, Verviers.

Resident Commissioners in Philadelphia.—Count d'Oultremont; Mr. J. Beco, Special Delegate, Brussels; Mr. J. Van Bree, Chief of Fine Art Department, Brussels; Mr. J. Gody, State-Architect, Chief of the Commissioners' Office, Brussels; M. Julien Derby, Brussels.

BRAZIL.

His Highness Gaston d'Orleans, Conde d'Eu, Marshall of the Army, President; Viscount de Jaguary, 1st Vice President; Viscount de Bonn-Retiro, 2d Vice President; Viscount de Souza Franco, Joaquin Antonio de Azevedo.

Resident Commissioner.—His Excellency A. P. de Carvalho Borges, Envoy Extraordinary and Minister Plenipotentiary of His Majesty the Emperor of Brazil, President, Washington, D. C.; Fellipe Lopes Netto, Vice President; Dr. Jose de Saldanha, Dr. Nicholas Joaquim Moreiro, Pedro Paes Leme, Dr. J. M. de Silva Coutinha, Captain Luiz de Saldanha, Naval Attache; Mr. B. F. Torreas de Barros, Secretary of Legation; Mr. Arthur Alvin, Engineer.

CHILI.

Resident Commissioners.—Sr. Don Adolfo Ybanez, Envoy Extraordinary and Minister Plenipotentiary of Chili, Washington; Edward Shippen, Esq., Consul, President, Philadelphia; Dr. J. Patterson Burd, Secretary and Treasury, Philadelphia; Sr. Francisco Gonzalez Errazuriz, Secretary Chilian Legation, Washington; Hon. Jos. P. Root, Washington.

Special Commissioners.—Sr. Don Eduardo Séve; Sr. Rafael Maseneli; Sr. E. Guerra, Engineer; Sr. Louis Buffe; Sr. E. Prieto; Sr. A. Sayon.

Home Commission.—Sr. Rafael Larrain, President, Santiago; Sr. Maximiano Errazuriz, Santiago; Sr. Ignacio Domeyko, Santiago; Sr. Armando Phillippi, Santiago; Francisco Solano Asta Buruago, Santiago; Sr. Ramon Barros, Santiago; Sr. Eugenio Figueora, Santiago; Sr. J. Pieto; Sr. E. Guerra; Sr. A. Layon.

CHINA.

Robert Hart, Inspector-General of Imperial Maritime Customs; G. Detring, Commissioner of Customs; E. B. Drew, Commission of Customs; W. Scott Fitz; H. Seymour Geary.

Commissioners at Philadelphia.—James H. Hart, Commissioner of Customs; Alfred Huber, Commissioner of Customs; J. L. Hammond, Commissioner of Customs; Edward Cunningham; W. W. Parkin; F. P. Knight; W. Noyes Morehouse, Imperial Maritime Customs, Secretary.

DENMARK.

Jacob Holmblad, Manufacturer, President; Olaf Hansen, U. S. Consul-General, Vice President; Joh. Hansen, Austrian Consul-General, Treasurer; C. C. Burmeister; Manufacturer; V. Christensen, Manufacturer; V. Fieldskov, Sculptor; Chas. Hansen, Manufacturer; Wm. Hammer, Artist; Thomas Schmidt, New York; Frederick Ferdinand Myhlertz, Royal Danish Vice-Consul, Philadelphia; Th. Green, Secretary.

EGYPT.

His Highness Prince Mohammed Tawfic Pacha, President, Cairo; His Excellency Raghib Pacha, Minister of Commerce, Vice President, Cairo; H. Brugsch Bey, Commissioner-General, Cairo.

Commissioners.—General Stone, Cairo; M. Mahmoud Bey, Astronomer, Cairo; M. Mariette Bey, Director of the Museum of Antiquities, Cairo; M. Gastinel Bey, Professor in the Medical School, Cairo; M. Rogers, Director in the Ministry of Public Instruction, Cairo; M. Acton, Chief of Division, Ministry of Commerce, Cairo; M. Baudry, Architect, Cairo; M. Delchevalerie, Attaché, Cairo.

Resident members in Philadelphia.—H. Brugsch Bey, Commissioner General, Cairo; E. Brugsch, Chief of Transportation and Installation, Cairo; A. Behmer, Attaché, Secretary, Cairo; Edward Elias, Secretary and Interpreter, Cairo; M. Daninos, Attaché, Cairo.

FRANCE.

M. M. Ozenne, Counsellor of State, Secretary General of the Ministry of Agriculture and Commerce, Commissioner General of International Exhibitions; Du Sommerard, Director of the Museums of Thermes and Cluny, Commissioner General of International Exhibitions.

Committee, organized under the Presidency of the Minister of Agriculture and Commerce.—M. Duclerc, Vice President of the National Assembly, Member of the Committee on International Exhibitions; Marquis de Talhouet, Deputy; Baron de Soubeyran, Deputy; Mr. Wolowski, Deputy; Marquis de Lafayette, Deputy; M. Bonnet, Deputy; M. Flotard, Deputy; M. Laboulaye, Deputy; M. Dietz-Monin, Deputy; M. Count de Bouille, Deputy; Viscount d'Haussonville, Deputy; M. de Chabrol, Deputy; M. Jullien, Deputy; the Secretary General of the Ministry of Agriculture and Commerce; the Director General of Customs; the Director of the Academy of Fine Arts; the Director of Consulates and Commercial Affairs, at the Ministry of Foreign Affairs; M. Outrey, Minister Plenipotentiary; M. Du Sommerard, Director of the Museum of Thermes and Cluny; the Assistant Director of Foreign Commerce; the President of the Paris Chamber of Commerce; M. Guillaume, Member of the Institute; Marquis de Rochambeau; Baron Alphonse de Rothschild; M. Sieber; M. Mame (Alfred;) M. Laveissiere (Jules,) Dealer in Metals; M. Rolleaux Dugage, Delegate Commissioner; M. de Fallois, Late Chief of Bureau, Ministry of Public Works, Assistant Secretary.

Resident Commissioners.—Mr. De Laforest, Consul-General of France, Commissioner General, New York; Mr. Edmond Breuil, Acting Commissioner General, New York; Mr. Ravin d'Elpeux, Vice Consul, Philadelphia; Captain Anfrye, Military Attaché, French Legation, Washington; Mr. A. Imbert-Gouzbeyre, Secretary, New York; M. Lavoinne, Attaché, Special Delegate, Philadelphia.

GERMAN EMPIRE.

Dr. Jacobi, Royal Prussian Actual Privy-Superior-Government Counsellor and Ministerial Director, President; Dr. Stuve, Royal Prussian Privy-Government Counsellor and Counsellor in the Ministry of Commerce; Dr. Wedding, Royal Prussian Counsellor of Mines; Mr. Reither, Royal Bavarian Counsellor of Legation; Mr. Von Nostitz-Walwitz, Royal Saxon Envoy Extraordinary and Minister Plenipotentiary; Baron Von Spitzemberg, Royal Wurtemberg Envoy Extraordinary and Plenipotentiary; Dr. Neidhardt, Grand Ducal Hessian Ministerial Counsellor; Mr. Kauffman, Royal Prussian Counsellor of Commerce; Dr. Kruger, Hanseatic Minister Resident; Mr. Von Holloben, Royal Prussian Superior Tribunal Counsellor; Mr. Neiberding, Counsellor in the Office of the Chancellor Empire; Baron Von Zedlitz, Royal Prussian Provincial Counsellor; Prof. F. Rouleux, Commissioner-General.

Resident Commissioners.—J. D. Lankenau, Esq., Philadelphia; Charles H. Meyer, Esq., Consul, Philadelphia; Gustavus Remak, Esq., Philadelphia; Dr. Fred. Volck, Baltimore; Mr. Bartels, Engineer and Architect, Philadelphia; Mr. Kniffler, Assistant Engineer, Philadelphia; G. A. Radtke, Secretary, Philadelphia.

GREECE.

Dr. Botassis, Special Representative, Consul-General, New York.

HAWAIIAN ISLANDS.

Hon. S. J. Wilder, Minister of the Interior, Honolulu; Hon. J. U. Kawainui, Honolulu; Elisha H. Allen, Jr., New York; H. R. Hitchcock, Special Agent, Philadelphia; Rev. Samuel C. Daman; Mr. William Tufts Brigham; Rev. S. E. Bishop.

ITALY.

H. E. Baron Blanc, Minister Plenipotentiary, Washington, D. C.; Count B. Litta, First Secretary of Legation, Washington, D. C.; Chevalier Alonzo M. Viti, Vice-Consul, Philadelphia; A. Padovani, President of the Central Committee, Florence; Giuseppi Dassi, President, Resident Commission, Milan; N. Cantalamessa Papotti, Rome; Pio Baccarani, Modena; G. Vigna Del Ferro, Secretary, Bologna; G. Caroni, Florence; Angelo Gianelli, Agent-General, Canada; C. Albertoni, Turin; Prof. Vincenzo Botta, New York.

JAPANESE EMPIRE.

His Excellency Okubo Toshmichi, Minister of the Interior and Privy Counsellor, President; His Excellency Lieutenant General Saigo Tsukumich, Imperial Army, Vice-President; Mr. Kawase Hideharu, Vice-President Bureau of Agriculture and Industry, Commissioner-General.

Commissioners—Mr. Tanaka Yoshio, Ministry of the Interior; Mr. Sekizawa Akekio, Bureau of Agriculture and Industry; Mr. Yamataka Nobuakira, Bureau of Agriculture and Industry; Mr. Shioda Masashi, Bureau of Agriculture and Industry; Mr. Suzuki Toshinobu, Bureau of Agriculture and Industry; Mr. Sugiyama Kadzunari, Bureau of Agriculture and Industry; Mr. Hidaka Ziro, Lieutenant of Imperial Army; Mr. Amori Korenaka, Bureau of Agriculture and Industry; Mr. Ishihara Toyoyasu, Bureau of Agriculture and Industry; Mr. Ishida Tametake, Bureau of Agriculture and Industry; Mr. Yamao Tsunetaro, Bureau of Agriculture and Industry; Mr. Kubo Hiromichi, Bureau of Agriculture and Industry; Mr. Fukui Makoto, Bureau of Agriculture and Industry; Mr. Shibata Hiroshi, Bureau of Agriculture and Industry; Mr. Makiyama Kohei, Bureau of Agriculture and Industry; Mr. Asami Tchuga, Bureau of Agriculture and Industry; Mr. Ishii Yoshitaka, Bureau of Agriculture and Industry; Mr. Asahi Susumu, Bureau of Agriculture and Industry; Mr. Yoshio Nagamasa, Bureau of Agriculture and Industry; Mr. Sasase Motoakira, Bureau of Agriculture and Industry.

Honorary Commissioners.—Dr. G. Wagener, Mr. Utsunomiya Saburo, Mr. Tokugawa Akitake, Mr. Fritz Cunliffe Owen, Mr. Komuchi Tomotsune.

Attaches.—Mr. Tsuchiya Shigenao, Mr. Yoshikawa Nisuke, Mr. Akusawa Susumu, Mr. Sanda Tadashi, Mr. Tawara Wakichiro.

MEXICO.

Manuel M. de Zamacona, City of Mexico; Elenterio Avila, City of Mexico; Mariano Barcena, City of Mexico; Jesus Leon Calderon, Secretary, City of Mexico; Fernando Camacho, City of Mexico; Plutarco Ornelas, City of Mexico; Arturo Ibanez, Engineer, City of Mexico; Edith Borzell, Engineer, City of Mexico.

NETHERLANDS.

Dr. E. H. von Bomhauer, Honorary Professor, Secretary of the Dutch Society of Sciences, Director of the Society for the Advancement of Industry in the Netherlands, President, Haarlem; F. de Casembroot, Rear Admiral, Aide-de-Camp in Extraordinary Service to His Majesty the King of the Netherlands, and Member of the States General, Second Chamber, The Hague; A. H. Eigeman, President of the Society of Dutch Industrials, Leiden; P. Hartsen, Chairman of the Amsterdam Board of Commerce, Amsterdam; J. E. Van Heemskerck Van Beest, Dutch Royal Navy, The Hague; Dr. W. T. A. Jonckbloet, President of the Committee of Superintendence of the Academy of Imitative Arts, Amsterdam; D. Van der Kellen, Jr., Member of the Administration Society D'Artiet Amicitiæ, Amsterdam; L. C. Van Kerkwyk, Retired Lieutenant-Colonel Corps of Engineering, Member of the Council of Administration of the Royal Institution of Engineers, The Hague; M. M. de Monchy, President of the Board of Commerce, Rotterdam; Dr. J. Th. Moulton, Vice-President of the Society to Promote Manufactures and Trade Industry in the Netherlands, The Hague; C. T. Van der Oudermeulen, President of the Dutch Society of Agriculture, The Hague; Baron W. G. Bransen van de Zyp, LL.D., Lord in Waiting to his Majesty the King of the Netherlands, Arnhem; Dr. M. W. C. Gori, Doctor of Medicine, late Medical Officer of the Netherlands Army, Ophthalmic Surgeon, Amsterdam; R. C. Burlage, Consul-General of the Netherlands, New York; L. Westergaard, Consul of the Netherlands, Philadelphia; D. D. Krussman Van Elten, Director, Art Department, New York; C. Muysken, Civil Engineer, Secretary, Haarlem.

NORWAY.

Herman Baars, Bergen; Wm. C. Christophersen, Buenos Ayres; Gerhard Gade, U. S. Consul, Christiania.

PERU.

José Carlos Tracy, President, New York; Juan José Barril; Wm. Runell Grace; Antonio Hernandez, Chief of Installation; Enrique Valiente, Secretary.

PORTUGAL.

Baron de Sant' Anna, Royal Commissioner, Washington, D. C.

Special Commissioners.—M. Jayme Batalha Reis, Agricultural Section; M. Lourenco Malheiro, Industrial Section, Alfredo Carlos Lecocq, Attaché Agricultural Section; Meni Rodrigues de Vasconcelloa, Attaché; Caetano Olympio Rovere, Attaché; Antonio Joze Antunes Navarro, Attaché Industrial Section; Jorge Candido Berkley Colter; Thomaz Victor Da Costa Sequeira.

RUSSIA.

Alexandre Boutowski, Privy Councillor, Director of the Department of Commerce and Manufactures, President; Dmitri Kobeko, Privy Councillor, Chief of Cabinet, Ministry of Finance; Nicolas Yermakoff, Actual Councillor of State, Vice-Director the Department of Commerce and Manufactures; Charles de Bielsky, Actual Councillor of State, Commissioner-General; Ican Wischnegradsky, Actual Councillor of State, Director of the Technological Institute of St. Petersburg; Michel Podobedoff, Actual Councillor of State, Ministry of Finance; Alexis Behr, Actual Councillor of State, Ministry of Finance; Nicolas Iljine, Councillor of State, Professor in Technological Institute of St. Petersburg; Dimitri Timiriasef, Councillor of State, Ministry of Finance.

Executive Committee at Philadelphia.—Charles de Bielsky, Actual Councillor of State, Commissioner-General; His Excellency Captain Semeschkine, Official Delegate; Captain Van der Hoven, Official Delegate; Baron Gustav Nolken, Delegate, Ministry of Finance; Emile de Lerche, Delegate, Ministry of Finance; Alexandre Goldechen, Delegate, Ministry of Finance; Charles Breckman, Delegate, Ministry of Finance; Leon Warschawsky, Delegate, Ministry of Finance; Alexander Pletneff, Delegate, Ministry of Finance; Pierre Orloff, Secretary; Charles Schoeneich, Engineer, Inspector of the Russian Section; Otto Kitzing, Special Secretary; Ernest Pelletier, Attaché.

SPAIN.

Colonel F. Lopez Fabra, Royal Commissioner-General; Colonel Juan J. Marin' Engineer Corps Spanish Army; Don Enrique Brotons, Secretary; Don Alvaro de la Gandara, Director of the Industrial Department; Count del Donadio, Director of the Department of Fine Arts; Don José Jordana y Morera, Director of the Agricultural Department; Don Juan Morphy, Consul-General of Spain, Philadelphia; Don Julian a Principe, Vice Consul, Attaché; Don Miguel Gonzalez, Attaché; Don José Fonrodona, Attaché.

Chiefs of Bureaus.—Don Alfredo Escobar, Don Enrique Borrel.

Chiefs of Installation.—Don Bernardo Forzano, Don Francisco Forzano, Don Francisco Parody, Interpreter.

SWEDEN.

P. A. Bergström, late Minister of Interior, President of Board of Domains, President, Stockholm; C. O. Troilius, Director-General of Government Railways, Vice-President, Stockholm; F. L. von Dardel, Director-General of Board of Public Buildings, Stockholm; Ch. Dickson, M. D., Göteborg; A. H. E. Fock, Baron, Chief of Board of Controls, Stockholm; F. W. Scholander, Professor, Academy of Fine Arts, Stockholm; C. F. Lundström, Manufacturer, Stockholm; N. H. Elfving, U. S. Consul, Stockholm; S. Stenberg, Professor, Carolinian Medico-Chirurgical Institute, Stockholm; A. R. Akerman, Professor, School of Mines, Stockholm; J. Bolinder, Manufacturer, Stockholm; J. Lenning, Manufacturer, Norrköping; C. L. Lundström, Manufacturer, Göteborg; Cl. G. Breitholtz, Colonel of Artillery, Stockholm K. Peyron, Captain in the Navy, Chamberlain, Stockholm; E. Widmark, Chief of the Board of Public Education, Stockholm; H. Widegren, Superintendent of Fisheries, Stockholm; P. E. Sidenbladh, Secretary of the Central Board of Statistics, Stockholm; V. Norman, Captain of Engineers, Secretary, Stockholm.

Commission in Philadelphia.—C. Juhlin-Dannfelt, Commissioner-General, Stockholm; Charles Bildt, Chamberlain, Assistant Commissioner, Philadelphia; L. Westergaard, Consul, Assistant Commissioner, Philadelphia; Dr. J. Lindahl, Secretary, Lund; Dr. Wm. P. Headden, Assistant Secretary, Philadelphia; W. Hoflstedt, Engineer, Secretary of the Judges, Stockholm; M. Isæus, Architect, Stockholm; Count Fr. Posse, Superintendent of the Machinery Department, Stockholm.

Special Commissioners.—G. W. Bergman, Captain of Artillery, Army Department, Stockholm; E. Brusewitz, Engineer, Metallurgical Department, Stockholm; O. Hermelin, Baron, Fine Art Department, Stockholm; A. E. Jacobi, Engineer, Machinery Department, Stockholm; C. J. Meijerberg, Professor, Educational Department, Stockholm.

TUNIS.

His Excellency Sidi Heussein, General of Division, Minister of Instruction and Public Works, President; G. H. Heap, Resident Commissioner.

SWITZERLAND.

Dr. Schenk, Member of Federal Council, Chief of the Department of Railways and Commerce, President; Mr. John Hitz, Consul-General of Switzerland, Washington; Mr. R. Koradi, Consul, Resident Commissioner, Philadelphia; Mr. W. Itschner, Vice-Consul, Resident Commissioner, Philadelphia; Dr. Adolph Hirsch, Director of the Observatory, Neuchatel; Mr. Paur-Usteri, Engineer, Zurich; Mr. Salvisberg, Architect, Berne; Dr. Emile Shumacher, Luzern; Colonel Siegfried, Chief of Bureau of the General Staff; Mr. Steinmann Bucher, Secretary of the Chamber of Commerce, Zurich; Dr. Fr. de Tschudi, Councillor of State, St. Gall; Dr. Willi, Secretary Federal Department of Commerce, Secretary, Berne.

Resident Commission in Switzerland.—Colonel H. Rieter, Commissioner-General, Winterthur.

Resident Commissioners in Philadelphia.—Mr. Edward Guyer, Federal Commissioner for Philadelphia; Mr. John E. Icely, Engineer, Basle; Mr. Joseph Beeler, Secretary, Weesen; Theodore Gribi, Agent for the Department of Instruments of Precision, Neuchatel; Earnest Eugster, Cantonal Agent, Speicher.

TURKEY.

His Excellency G. d'Aristarchi Bey, Minister Plenipotentiary, President, Washington D. C.; Baltazzi Effendi, First Secretary of Legation, Washington, D. C.; Rustem Effendi, Second Secretary of Legation, Washington, D. C.; Count Della Sala; Mr. Edward Sherer, Acting Consul, New York; Mr. Auguste Giese, Honorary Member, New York.

UNITED KINGDOM AND COLONIES.

His Grace the Duke of Richmond and Gordon, K. G., Lord President of the Council; the Right Hon. Viscount Sandon, M. P., Vice President of the Council.

Special Commissioner to represent Great Britain at Opening Ceremonial.—The Right Hon. Sir Edward Thornton, K. C. B., Her Britannic Majesty's Envoy Extraordinary and Minister Plenipotentiary at Washington.

Joint Executive Commissioners.—Colonel Herbert B. Sandford, R. A.; Prof. Thos. C. Archer, F. R. S. E.

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Executive Staff.—Thomas A. Wright, Superintendent Industrial Space; John Anderson, LL. D., Superintendent General Machinery; J. M. Jopling, Superintendent Fine Arts; B. T. Brandreth Gibbs, Superintendent Agriculture and Horticulture, J. H. Cundall, Assistant General Superintendent and Engineer; Hugh Willoughby

Sweny, Assistant Superintendent Catalogue and Official Publications; Frederick J. Hodgkinson, Financial Clerk; Ernest Charrington, Clerical Assistant; J. M. Brett; Clerical Assistant India Section.

BAHAMAS.

Dr. Edw. T. Webb, Philadelphia; Hon. T. Darling.

BERMUDA.

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Assistant Commissioners.—Major Wilkinson; A. H. Frazer Lefroy, Esq.; W. S. Barr, Esq.; H. J. Hinson, Esq., M. D.; J. B. Heyl, Esq.; C. C. Keane, Esq.

Resident Commissioner.—A. A. Outerbridge, Philadelphia.

BRITISH GUIANA.

A. A. Outerbridge, Philadelphia.

CAPE OF GOOD HOPE.

Mr. H. Crawford Coates, Executive Commissioner.

CANADA.

Senator Luc Letellier de St. Just, Minister of Agriculture of Canada, President, Ottowa.

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Executive Commissioners.—Hon. E. G. Penny, Senator, Quebec; Hon. R. D. Wilmot, Senator, New Brunswick; D. Macdougall, Esq., Berlin, Ontario; J. Perrault, Esq., Secretary, Ottawa.

JAMAICA.

Wm. Robert Thomson, Esq., Kingston.

NEW SOUTH WALES.

His Honor Sir James Martin Knight, Chief Justice, President; Hon. John Hay, President of the Legislative Council, Vice President; Hon. George Wigram Allen, Speaker of the Legislative Assembly, Vice President; Hon. Sir Edward Deas Thomson, C.B., K.C.M.G., M.L.C., Vice President.

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Edward King Cox, M.L.C.; Edward Knox, Esq.; Archibald Leversidge, Esq.; Professor Swersedge; C. S. Wilkinson, Esq.; Charles Moore, Esq.; P. F. Adams, Esq.; Robert Adams, Esq.; John Belisario, Esq.; James Powell, Esq.; Archibald Thompson, Esq.; Joseph Thompson, Esq.; H. C. Russell, Esq.; P. N. Trebeck, Esq.; James Norton, Esq.; John Leving, Esq.; Mr. Julian Salomons; Mr. John Badgery.

Resident Commissioners.—Augustus Morris, Esq., Executive Commissioner, New York; Marshall Burdekin, Esq., Sydney; Roderick William Cameron, Esq., New York; Sir Daniel Cooper, Baronet, London; Edward Flood, Esq., Sydney; Dr. R. W. Forbes, New York; Patrick Alfred Jennings, Esq., Sydney; Hon. Jacob Levi Montefiore, Member of the Legislative Council of New South Wales, Sydney; Geo. Oakes, Esq., Sydney; Joseph James Phelps, Member of the Legislative Assembly of New South Wales, Sydney; George Russell, Esq., Scotland; Hon. James White, Member of the Legislative Council of New South Wales, Sydney; Andrew Garran, Esq., LL.D.; Christopher Rolleston, Esq.; William Morris, Esq.; A. D. Shepard, Esq.; Chas. Robinson, Secretary.

NEW ZEALAND.

Hon. Walter Baldok Durant Mantel, M.L.C., Chairman; Hon. William Gisborne; William Hort Levin, Esq., Daniel M'Intyre, Esq., Consular Agent of the United States Government at Wellington; James Hector, Esq., C.M.G., M.D., F.R.S., Special Commissioner; Arthur Thomas Bothamley, Secretary.

QUEENSLAND.

Angus Mackay, Esq.; P. A. Jennings, Esq. : W. B. Tooth, Esq.; W. Hill, Esq.; W. R. Gordon, Esq.; C. Strager, Esq.; T. Stoman, Esq.

SOUTH AUSTRALIA (Adelaide.)

His Excellency Sir Anthony Musgrave, Esq., C.M.G., Chairman; Hon, W. Everard, Commissioner of Crown Lands; Hon. H. E. Bright, M.L.C., J.P., Commissioner of Public Works; Hon. John Crozier, M.L.C., J.P.; Hon. Wentwood Cavanagh, Esq., M.P., J.P.; Josiah Boothly, Esq., J.P.; E. W. Andrew, Esq., J.P.; S. Davenport, Esq., J.P., Special Commissioner; Joseph Crompton, Esq., J.P.; George M'Ewen, Esq., J.P.; Dr. Schomburgh, D.P., J.P.; Caleb Peacock, Esq., J.P.; R. D. Ross, Esq., M.P., J.P.; E. S. Smith, Esq., M.P., J.P.; Walter Hackel, Esq.; J. A. Holden, J.P.; S. V. Pozy, Esq.; C. J. Coates, Esq., Commissioner and Honorary Secretary; F. G. Waterhouse, Esq., W. A. E. West Erskine, Esq.

TASMANIA.

H. P. Welch, Esq., Commissioner; P. A. Jennings.

VICTORIA.

Sir Redmond Barry, Acting Chief Justice of the Supreme Court, President; Hon. J. J. Casey, M. P.; Hon. J. F. Sullivan, M. P.; Hon. C. J. Jenner, M. L. C; Hon. Jas. Munroe, M. P.; J. M'Ilwraith, Esq.; L. J. Sherrard, Esq.; Count de Castlenau; Hon. S. H. Bindon; Jas. Bosisto, Esq., M. P.; Jas. Gatehouse, Esq., Mayor of Melbourne; J. I. Bleasdale, D. D.; Hon. Sir John O'Shanassy, K. C. M. G.; Hon. Sir James M'Culloch, M. P.; Hon. John Alexander Macpherson, M. P.; Hon. John Thomas Smith, M. P.; Leslie James Sherrard, Esq.; John Danks, Esq.; John M'Intyre, Esq.; George Collins Levey, Esq., Secretary.

VENEZUELA.

Mr. Leon de la Cova, Consul, Philadelphia; Dr. Adolphus Ernst, Professor University at Caracas.

GRAND DUCHY OF LUXEMBOURG.

F. Berger, Member of the Chamber of Deputies, Delegate Commissioner; Emile Berger, Secretary.

BUILDINGS.

The number of separate edifices of all kinds erected for the uses of this Exhibition, largely exceeded in number and size any estimate that had originally been made. This was due, *First*, To the great increase in the size and number of the exhibits. *Second*, To the special interest taken by foreign governments, which resulted in there being erected many buildings for the use of such countries, and *Third*, State pride and energy brought about the idea that it would be well to have a rendezvous for the citizens of the several States in their own quarters, and this fact secured the erection of State Buildings. The official statement in reference to these buildings fixes the total number at 180, a list of which is herewith given as a permanent record of what added so much to the beauty and attraction of the Exhibition.

NO. 1. THE MAIN EXHIBITION BUILDING.

Size, 1,880 by 464 feet. Engineers and architects, Henry Pettitt & Jos. M. Wilson. Contractor, R. J. Dobbins. Wrought and cast iron manufactured by Wm. Sellers & Co., Moor Iron Works. Wrought iron furnished by A. & P. Roberts, Pencoyd Rolling Mills. Cast iron furnished by Morris, Tasker & Co., Pascal Iron Works. Erector of iron works, Watson Manufacturing Co.

The Main Exhibition Building, containing Departments I, II, III of the Exhibition, is in the form of a parallelogram, extending east and west 1,880 feet in length, and north and south 464 feet in width.

The larger portion of the structure is one story in height, and shows the main cornice upon the outside at 45 feet above the ground, the interior height being 70 feet. At the centre of the longer sides are projections 416 feet in length, and in the centre of the shorter sides or ends of the building are projections 216 feet in length. In these projections, in the centre of the four sides, are located the main entrances, which are provided with arcades upon the ground floor, and central facades extending to the height of 90 feet.

The East Entrance forms the principal approach for carriages, visitors being allowed to alight at the doors of the building under cover of the arcade. The South Entrance is the principal approach from street cars, the ticket offices being located upon the line of Elm Avenue, with covered ways provided for entrance into the building itself. The Main Portal on the north side communicates with the Art Gallery, and the Main Portal on the west side gives the main passage way to the Machinery and Agricultural Halls.

Upon the corners of the building there are four towers, 75 feet in height, and between the towers and the central projections or entrances there is a lower roof introduced, showing a cornice at 24 feet above the ground. In order to obtain a central feature for the building as a whole, the roof over the central part, for 184 feet square, has been raised above the surrounding portion, and four towers, 48 feet square, rising to 120 feet in height, have been introduced at the corners of the elevated roof.

The areas covered are as follows:

	Square feet.	Acres.
Ground floor	872,320	20.02
Upper floors in projections	37,344	.85
Upper floors in towers	26,344	.60
	936,008	21.47

The general arrangement of the ground plan shows a central avenue or nave 120 feet in width, and extending 1,832 feet in length. This is the longest avenue of that width ever introduced into an exhibition building. On either side of this nave there is an avenue 100 feet by 1,832 feet in length. Between the nave and side avenues are aisles 48 feet wide, and on the outer sides of the building smaller aisles 24 feet in width. In order to break the great length of the roof lines, three cross avenues or transepts have been introduced of the same widths and in the same relative positions to each other as the nave and avenues running lengthwise, viz: a central transept 120 feet in width by 416 feet in length, with one on either side of 100 feet by 416 feet, and aisles between of 48 feet. The intersections of these avenues and transepts in the central portion of the building result in dividing the ground floor into nine open spaces, free from supporting columns, and covering in the aggregate an area of 416 feet square. Four of these spaces are 100 feet square, four 100 feet by 120 feet, and the central space or pavilion 120 feet square. The intersections of the 48 feet aisles produce four interior courts 48 feet square, one at each corner of the central space. The main promenades through the nave and central transepts are each 30 feet in width, and those through the centre of the side avenues and transepts 15 feet each. All other walks are 10 feet wide, and lead at either end to exit doors.

The following table gives the principal dimensions of the different parts of the building:

DIMENSIONS.

Measurements taken from centre to centre of supporting columns.

Length of building	1,880 feet.
Width of building	464 "

CENTRAL AVENUE OR NAVE.

Length	1,832 feet.
Width	120 "
Height to top of supporting columns	45 "
Height to ridge of roof	70 "

CENTRAL TRANSEPT.

Length	416 "
Width	120 "
Height to top of column	45 "
Height to ridge of roof	70 "

SIDE AVENUES.

Length	1,832 "
Width	100 "
Height to top of columns	45 "
Height to ridge of roof	65 "

SIDE TRANSEPTS.

Length	416 "
Width	100 "
Height to top of columns	45 "
Height to ridge of roof	65 "

CENTRAL AISLES.

Length at east end	744 feet.
Length at west end	672 "
Width	48 "
Height to roof	30 "

SIDE AISLES.

Length at east end	744 "
Length at west end	672 "
Width	24 "
Height to roof	24 "

CENTRE SPACE OR PAVILION.

Ground plan	120 ft. sq.
Height to top of supporting columns	72 "
Height to ridge of roof	96 "

TOWERS OVER COURTS.

Ground plan	48 "
Height to roof	120 "

CORNER TOWERS.

Ground plan	24 "
Height to roof	75 "

The foundation consists of piers of masonry. The superstructure is composed of wrought iron columns, which support wrought iron roof trusses. These columns are composed of rolled channel bars, with plates riveted to the flanges. Lengthwise of the building the columns are spaced at the uniform distance apart of 24 feet. In the entire structure there are 672 columns, the shortest being 23 feet and the longest 125 feet in length. Their aggregate weight is 2,200,000 pounds. The roof trusses are similar in form to those in general use for depots and warehouses, and consist of straight rafters with struts and tie-bars. The aggregate weight of iron in the roof trusses and girders is 5,000,000 pounds. This building being a temporary construction, the columns and trusses are so designed that they may be easily taken down and erected again at another site.

The sides of the building, for the height of seven feet from the ground, are finished with brickwork in panels between the columns; above the seven feet, with glazed sash. Portions of the sash are movable for ventilation. The roof covering is of tin upon sheathing boards. The ground flooring is of plank upon sills resting upon the ground, with no open space underneath.

The building stands nearly due east and west, and is lighted almost entirely by side light from the north and south sides. Louvre ventilators are introduced over the central nave and each of the avenues. Skylights are introduced over the central aisles.

Small balconies, or galleries of observation, have been provided in the four central towers of the building at the heights of the different stories.

A complete system of water supply, with ample provisions of fire cocks, etc., is provided for protection against fire, and for sanitary purposes.

Offices for foreign commissions are placed along the sides of the building, in the side aisles, in proximity to the products exhibited.

The ground was graded and foundation laid for this building in the autumn of 1374. The erection of iron work at the site commenced on May 8, 1875; the erection of the iron work was finished December 2, 1875; and the building was accepted from the contractor February 14, 1876. The cost of the building was $1,580,000.

NO. 2. MACHINERY HALL.

Size, 360 by 1,402 feet; annex, 208 by 210 feet.

Engineers and Architects.—Henry Pettit, Joseph M. Wilson, Philadelphia.

Contractor.—Philip Quigley, Wilmington, Delaware.

Wrought and cast iron furnished by Pusey, Jones & Co., Wilmington, Delaware.

Machinery Hall is located west of the intersection of Belmont and Elm avenues, at a distance of 542 feet from the west front of the Main Exhibition Building, and 274 feet from the north side of Elm avenue. The north front of the building is upon the same line as that of the Main Exhibition Building, thus presenting a frontage of 3,824 feet from the east to the west ends of the exhibition buildings upon the principle avenue within the grounds.

The principal portion of the structure is one story in height, showing the main cornice upon the outside at 40 feet from the ground, the interior height to the top of the ventilators in the avenues being 70 feet, and in the aisles 40 feet. To break the long lines upon the exterior, projections have been introduced upon the four sides, and the main entrances finished with facades, extending to 78 feet in height. The east entrance forms the principal approach from street cars, from the Main Exhibition Building, and from the Pennsylvania Railroad depot. Along the south side are the boiler houses and other buildings for special kinds of machinery. The west entrance affords the most direct communication with George's Hill, which point affords the best view of the entire exhibition grounds.

The arrangement of the ground plan shows two main avenues 90 feet wide by 1,360 feet long, with a central aisle between, and an aisle on either side. Each aisle is 60 feet in width; the two avenues and three aisles making the total width of 360 feet. At the centre of the building is a transept of 90 feet in width, which at the south end is prolonged beyond the Main Hall. This transept, beginning at 36 feet from the Main Hall and extending 268 feet, is flanked on either side by aisles of 60 feet in width, and forms the annex for hydraulic machines. The promenades in the avenues are 15 feet in width, in the transept 25 feet, and in the aisles 10 feet. All other walks extending across the building are 10 feet in width, and lead at either end to exit doors.

The foundations consist of piers of masonry. The superstructure consists of solid timber columns supporting roof trusses, constructed with straight wooden principals and wrought iron ties and struts. As a general rule, the columns are placed lengthwise of the building, at the uniform distance apart of 16 feet. The columns are 40 feet high to the heel block of the 90 feet span roof trusses over the avenues, and they support the heel of the 60 feet spans over the aisles at the height of 20 feet. The outer walls are built of masonry to a height of five feet, and above that are composed of glazed sash placed between the columns. Portions of the sash are movable for ventilation. Louvre ventilators are introduced in continuous lengths over both the avenues and the aisles. The building is lit entirely by side light.

The motive power is furnished by a Corliss engine of 1,400 horse power. There are eight main lines of shafting, extending almost the entire length of the structure, and countershafts are introduced into the aisles where needed. The hangers are attached at the height of 20 feet from the floor.

The annex for hydraulic machines contains a tank 60 feet by 160 feet, with depth of water of 10 feet. In this hydraulic machinery is exhibited in full operation. At the south end of this tank is a waterfall 35 feet high by 40 feet wide, supplied from the tank by the pumps upon exhibition.

The contract in the erection of Machinery Hall was made January 27, 1875, and the building was begun forthwith, and finished October 1, 1875. The cost was $542,300. The exhibition area covers about 14 acres.

NO. 3. STOKES & PARRISH, MACHINE SHOP, &C.

Size, 112 feet by 60 feet. Stokes & Parrish, Philadelphia. Constitutes a part of Annex No. 2 to Machinery Hall, and is intended to execute repairs and machine work for the exhibitors. It is located south of Machinery Hall.

NO. 4. AMERICAN BOILER HOUSE.

It is situated south of Machinery Hall, near the Hydraulic Annex, and furnishes steam for the American section.

NO. 5. CORLISS BOILER HOUSE

Architects, Pettit & Wilson, Philadelphia. Size, 40 feet by 80 feet. Corliss Steam Engine Company, Providence, R. I. Is built of composite stone and wood, and furnishes steam for the Corliss engine in Machinery Hall from twenty vertical tubular boilers, aggregating 1,400 horse-power. It is situated south of Machinery Hall.

NO. 6. ENGLISH BOILER HOUSE.

Size, 24 feet by 71 feet. A composite wood and stone building, furnishing steam to English and other foreign exhibitors in Machinery Hall, and situated to the south of it.

NO. 7. SHOE AND LEATHER EXHIBITION BUILDING.

NO. 8. CENTENNIAL BOARD OF FINANCE OFFICE

Architect, H. J. Schwarzmann. Size, 140 feet by 212 feet. A one-story frame building, situated on the left hand side of the main entrance to the Exhibition grounds, and occupied by the Board of Finance for the transaction of daily business.

NO. 9. U. S. CENTENNIAL COMMISSION OFFICE.

Architect, H. J. Schwarzman. Size, 192 feet by 140 feet. Located on the right hand side of the main entrance to the Exhibition grounds. It is built of wood, one story high, and is used as a business office by the Centennial Commission.

NO. 10. CENTENNIAL NATIONAL BANK.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 72 feet by 40 feet. E. A. Rollins, President. Situated at the north-west corner of the Main Exhibition Building, and east of the Centennial Commission Office. It is one story high, built of wood, and is the medium for transacting the financial affairs of the Exhibition.

NO. 11. WEIMER'S MACHINE WORKS, LEBANON, PA.

This outdoor exhibit is located south of Machinery Hall, between the Shoe and Leather Building, and Stokes & Parish Machine shop, and consists of bells, car dumps, carts for coal, iron bars, and steel coil tuyere.

NO. 12. BARTHOLDI'S FOUNTAIN.

Architect, Bartholdi, of Paris. Size, basin, 26 feet in diameter; height, 30 feet, statue, 11 feet. Situated in the Esplanade in front of the main entrance to the grounds.

NO. 13. CATHOLIC TOTAL ABSTINENCE FOUNTAIN.

Architect, Herman Kirn, Philadelphia. Situated at the junction of Fountain Avenue and the Avenue of the Republic, at the north-western corner of Machinery Hall. In design it is a circular platform, with four arms projecting at right angels, terminating in four smaller circular platforms. From the centre of the large circle rises a marble rockwork sixteen feet high, with a diameter of eighteen feet at base, on which stands a statue of Moses smiting the rock. The water descends from numerous fissures into a basin forty feet in diameter. On each of the circular platforms is a drinking fountain, twelve feet in height and eight feet eight inches in diameter, surrounded with statues nine feet high, representing Father Mathew, Charles Carroll, Archbiship John Carroll, and Commodore John Barry. It has been erected by contributions made by the numerous societies forming the Catholic Total Abstinence Union of America.

NO. 14. FULLER, WARREN & CO.'S STOVE BUILDING.

Size, 60 feet by 45 feet. Fuller, Warren & Co., New York city, Chicago, Ill., Cleveland, O., and Troy, N. Y. Located at the east end of Machinery Hall, and facing the Fountain of the Catholic Total Abstinence society. It contains samples of stoves, heaters, and ranges in operation; is built of wood, one story high, surmounted by a cupola.

NO. 15. GILLENDER & SONS' GLASSWARE BUILDING.

Architect, James H. Windrim. Size, 60 feet by 90 feet. Gillender & Sons, Philadelphia. A one-story frame house, situated west of Machinery Hall, on the walk to the Fifty-second street entrance, where glass in process of manufacture is shown.

NO. 16. CAMP OF WEST POINT CADETS.

Located on the eastern slope of George's Hill, at the western end of Fountain avenue. The tents accommodate 300 cadets, with officers and band.

NO. 17. IRON PIPE.

Andrew O'Neill, Ansonia, Conn. This is an outdoor exhibit, situated south of Machinery Hall, and consists of water and gas pipes, showing patent process of jointing.

NO. 18. LIBERTY STOVE WORKS.

Architect, C. C. Phillips. Size, 45 feet by 34 feet. Charles Noble & Co., Philadelphia. A one-story frame building, located west of Machinery Hall, and south of the Catholic Total Abstinence Fountain, on Fountain avenue; containing different varieties of heaters, stoves, and ranges manufactured by Noble & Co.

NO. 19. SAWMILL ANNEX.

Size, 276 feet by 80 feet, and

NO. 20. BOILER HOUSE.

Architects, Pettit & Wilson, Philadelphia. Size, 48 feet by 30 feet.

United States Centennial Commissioners, exhibit direct-acting steam saw machines and gang saws. Are on Fountain avenue, west of Machinery Hall, and consist of a one story frame open building, and a boiler house attached.

NO. 21. RAILROAD ENGINE HOUSE.

This building is used for storing and repairing the engines of the Narrow Gauge railroad company, and is located West of Machinery Hall.

NO. 22. ST. CECELIAN ORGANS.

T. C. Knauff, Philadelphia, Pa. This exhibit consists of miniature organs, and some clocks made in 1676, 1776 and 1876. The building is frame, one story high, and in design resembles an organ. It is situated South of Mineral Annex, No. 1, near eastern entrance to Main Building.

NO. 23. AUTOMATIC RAILROAD.

Size 20 feet by 150 feet. Charles W. Hunt, New York. Illustrations of the mode of unloading vessels by means of a railroad worked by a self-acting apparatus. Is situated west of Machinery Hall.

NO. 24. MONUMENT—THE AMERICAN SOLDIER.

New England Company, Hartford, Conn. This is a collossal monument situated between the Main Building and Art Gallery, on avenue of the Republic. It is made of Westerly granite, is 21 feet 6 inches high, weighs 30 tons, and is the largest statue of modern times.

NO. 25. GUNPOWDER PILE DRIVER.

Size, 35 feet by 12 feet. Gunpowder Pile Driving Company, Philadelphia. Is built in the open air to exhibit the operation of pile driving by means of gunpowder. It is situated south-west of Machinery Hall, between it and the barrier.

NO. 26. STARR'S IRON WORKS.

Jesse W. Starr & Son, Camden, N. J. The space allotted to Messrs. Starr & Son, i occupied with gas works, pipes, special castings, stop-valves, lamp-posts, and fire hydrants. It is located south-west of Machinery Hall, close to the barrier.

NO. 27. WEST END RAILWAY OFFICE.

This is a two story frame building, situated west of Machinery Hall, and north of Railroad engine house, on line of narrow gauge road, and designed for the transaction of the company's business.

NO. 28. PNEUMATIC TUBES.

A. Brisbane. These tubes are placed on a platform, showing the process of transmitting messages and packages by this method. The exhibit is situated west of the gas machine, near fence on Elm avenue.

NO. 29. EXHIBIT OF NEW ENGLAND GRANITE CO., HARTFORD, CONN.

Situated in front of Board of Finance office, and consists of a Corinthian monument, 46 feet high, crowned with the statue of Hope. A canopy, 40 feet high, surmounted by spire and cross, under canopy a figure indicative of Memory. A Gothic monument with four polished columns at corners of die; a model of statue representing soldier of 1776 (life size;) an individual memorial crowned with cross; a Gothic column, surmounted by spire and turrets; a Scotch granite polished monument, 16 feet high, with circular dome terminating in a finial; an individual memorial; a small monument, terminating in an urn; and a rustic monument, with ivy-circled column surmounted with cross.

NO. 30. PATENT RAILROAD CROSSING.

This exhibit is located on line of narrow gauge road near Elm Avenue, and west of Machinery Hall. It is designed to keep dirt from accumulating between the rails and planks of crossing.

NO. 31. NEVADA QUARTZ MILL.

Size, 60 by 43 feet. State of Nevada. Exhibits the process of manipulating ores and precious metals. It is a one-story frame building, situated south of Machinery Hall.

NO. 32. STORE HOUSE.

A one-story brick building, 10 feet by 10, used for the storage of oil for the machinery department. It is between the Nevada quartz mill and the barrier.

NO. 33. FRICTION DRUM.

I. S. Mundy, Newark, N. J. Situated west of gas machine, near Elm Avenue, and consists of an improved portable friction drum.

NO. 34. U. S. HOISTING MACHINE.

Stokes & Parrish. This exhibit adjoins the machine shop of Stokes & Parrish, south of Machinery Hall, and consists of a derrick with engine and boiler attachment.

NO. 35. CHILIAN AMALGAMATING MACHINERY.

Commission for Chili. Contains working models of amalgamating machinery used in working ores, and has a boiler house with small cylinder boilers. Is situated west of Machinery Hall.

NO. 36. CAMPBELL PRINTING PRESS BUILDING.

Architect, Alexander B. Bary—Size, 88 by 144 feet. Campbell Printing Press and Manufacturing Co., Brooklyn, N. Y. The various printing presses manufactured by this company are exhibited in operation; the power is furnished by a thirty (30) horse-power engine and boiler. Specimens of type printing from the date of the invention, and of sunlight printing are shown, and a complete printing office, of the fashion of 1776, is also in operation.

NO. 37. OLD LOCOMOTIVE AND CARS.

Exhibited by Pennsylvania Railroad Company. This exhibit is situated on line of Narrow-Gauge Railroad, west of Machinery Hall, and consists of the engine "John Bull," with tender and two passenger cars, standing upon the rails and stone sleepers of the first piece of track laid for the Camden and Amboy Railroad, in 1831; also, the first iron prow used on ships in crossing the Atlantic Ocean.

NO. 38. CAR HOUSE.

Size, 140 feet by 44 feet. Situated west of Machinery Hall, on line of Narrow-Gauge Railroad; designed for the exhibition of cars.

NO. 39. POLICE STATION.

This building is situated south-west of Glass Factory, and is used by the Centennial Guard for quarters, etc.

NO. 40. AVERILL CHEMICAL PAINT CO.

Size, 36 feet by 42 feet. Contains exhibits of the Averill Chemical Paint ready for use, and applied. The building is constructed on the Rogers' patent, has no frame work, and is put together with bolts and iron tongues. It is west of the Liberty Stove Works, on Fountain Avenue.

NO. 41. OFFICIAL CATALOGUE AND NEWSPAPER ADVERTISING OFFICE.

Size, 20 feet by 30 feet. Centennial Catalogue Company—S. M. Pettengill & Co., New York, Philadelphia and Boston. A one-story building, occupied jointly by the Centennial Catalogue Company, and S. M. Pettengill & Co., Newspaper Advertising Agents. Contains bound volumes and files of the principal newspapers of the country, specimen numbers of old newspapers, photographs of editors and publishers, etc. Situated south of the east end of Machinery Hall.

NO. 42. STOKES & PARRISH BOILER HOUSE.

Size, 10 feet by 12 feet. Contains a boiler and engines; situated east of the southern central entrance of the Main Building.

NO. 43. EHRET'S WATER-PROOF ROOFING.

M. Ehret, Jr., Philadelphia, Pa. A circular pavilion, showing fire and water-proof roofiing. It is located to the east of the central southern entrance of the Main Building.

NO. 44. TOMBSTONES

This exhibit is situated south of the Main Building, near central entrance, and consists of tombstones, inclosed by ornamental iron fence.

NO. 45. TERRA-COTTA PIPES.

Exhibited by E. W. Rittenhouse & Bro., Baltimore, Md. Comprises drain pipes of different sizes, elbows, angles, etc. South-west of Machinery Hall, and adjoining the Gas Machine.

NO. 46. MINERAL ANNEX, 1 AND 2.

An extension of the Main Building, to the east of its south central entrance. It contains the greater part of the American exhibits in Department I. (Mining and Metallurgy,) which are catalogued in Part I., pages 47 to 60.

NO. 47. FIRE-PROOF VENTILATED BUILDING.

Architect and builder, Robert Irwest. Size, 13 feet by 13 feet. This is a one-story building composed of hollow bricks, peculiar in construction. Located south of Main Building and Annex No. 2.

NO. 48. HEWITT & BRENNAN'S SWINGS.

These swings are known as aerial chairs, and are operated by means of a treadle with foot-pressure, leaving the hand entirely free. They number six, and are situated on Agricultural Avenue, immediately south of the American Restaurant, and south of Main Building, where the exhibit is known as aerial chairs.

NO. 49. ORNAMENTAL STONE WORK.

An exhibit of brown stone, representing a double entrance to dwelling, elaborately carved, with rough dressed trimmings. Located south of St. Cecilian Organ and Main Building Annex No. 1.

NO. 51. UNITED STATES GOVERNMENT BUILDING.

Architect, James H. Windrim. Size, floor area, 102,840 square feet. This structure is situated at the intersection of Belmont and Fountain Avenues, is built in the form of a Latin cross, and is of frame white pine, unplaned, with two tiers of windows. It contains for exhibition contributions from the different Executive Departments of the United States Government.

NO. 51½. BARTHOLDI ELECTRIC LIGHT.

Is situated immediately west of Cook, Son & Jenkins' Pavilion, on border of lake, and consists of arm of statue to be erected in New York harbor.

NO. 52. UNITED STATES ARMY POST HOSPITAL.

Size, 35 feet by 39 feet, and addition of 40 feet by 14 feet. This Hospital is situated north of the Main Building, is two stories in height, and is intended to hold twenty-four beds. It is built of wood, and contains medical appliances of all kinds, including medicines, instruments, hospital stores, clothing books and furniture, models of hospitals, cars, boats, ambulances, etc., microscopical and other specimens. The construction of the building and its contents are on exhibition.

NO. 52½. HOWE MONUMENT.

This monument was erected by the Howe Machine Co., to the memory of Elias Howe, Jr., the first inventor of sewing machines in this country. It was designed by Mr. Ellis, and cast by Wood Bros., Philadelphia, and is situated at the western end of the lake, opposite northern central entrance to Machinery Hall.

NO. 53. UNITED STATES HOSPITAL TENT.

NO. 53½. JERUSALEM BAZAAR.

Situated on south side of Fountain Avenue, and due north of Turkish Bazaar. Designed for sale of olive wood.

NO. 54. UNITED STATES LABORATORY.

Architect, Col. T. T. S. Laidley, Ordnance Corps, U. S. A. Size, 53 feet by 23 feet. This building is located north of Main Building, and is built of wrought iron, rivetted, covered with a light casing of wood. It is designed with the view of preventing the great loss of life that usually result from the demolition of a building of ordinary construction, by the explosion of even a small amount of powder. In the event of an explosion in this building, the roof and sides fall at once, and the iron frame is left standing, in order to shield the inmates from being crushed beneath the ruins. The building, as well as its contents, is on exhibition.

NO. 54½. PHILADELPHIA "TIMES" PAVILION.

Architects, Wilson Bros. & Co., Philadelphia. Size, 28 feet by 17 feet. A. K. M'Clure, editor. The Centennial business office of the "Times," a daily paper, issued morning and evening, and printed on a Hoe perfecting press in Machinery Hall. It is a one-story frame building, located on Belmont avenue, opposite and east of the lake.

NO. 55. PENNSYLVANIA STATE BUILDING.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 97 feet by 55 feet. A two-story frame building, with a tower, of Gothic style. It faces the lake, between Fountain avenue and the Avenue of the Republic; containg reception rooms and offices for the use of the State Commissioners and visitors.

NO. 55½. HUNGARIAN WINE PAVILION.

Architect, H. J. Schwarzman. Jacob Kohn, manager. This structure is circular in form, situated on State avenue, north of the Japanese and Mississippi buildings, and devoted to the sale of Hungarian wines exclusively.

NO. 56. OHIO STATE BUILDING.

Architects, Heard & Sons, Cleveland, Ohio. Size, 45 feet by 44 feet, and Annex, 60 feet by 40 feet. A two-story stone pavilion, located at the junction of State and Belmont avenues. It is the most substantial of the State buildings. It is built of sandstone, furnished by the proprietors of the various quarries in Ohio. Some of the stones are very beautiful, and the colors are tastefully blended together. Each course of stone is from a different quarry, and twenty-one quarries are represented in the like number of layers from the ground to the eaves. The building is two stories, with high roof. Height of first story, 13 feet 5 inches; of second story, 11 feet 5 inches; of roof, 12 feet. The building is 60 feet wide and 58 feet deep, including the front porch. The front is ornamented with a porch, and windows of plate glass—two lights, 28 by 46 inches, in each frame. In the peak of the roof is the coat-of-arms of the State. A veranda 12 feet wide runs on each side and in rear of the building, that on the east being covered with a porch without columns—the other porches having supporting columns. A hall-way 9 feet wide and 46 feet long runs through the centre of the building on each floor, on each side of which are committee, reception, retiring and other suitable rooms. Heard & Sons, of Cleveland, O., were the architects, and Aaron Doan & Co., of Philadelphia, the builder.

A two-story frame building, 40 by 60 feet, has been built as an annex to the above which will give the State of Ohio the largest private building on the grounds.

NO. 56½. CENTENNIAL POLICE STATION.

This building is situated immediately north of State avenue and Hungarian Wine Pavilion, and is used as quarters, etc., of Centennial Guards.

NO. 57. INDIANA STATE BUILDING.

It is constructed of a combination of wood and other building materials, a frame of wood being the support of the building and roof, to which an outer wall of brick, stone, terra cotta, iron, and coal can be attached. There are three entrances by four broad steps to the front and side porches, and an open-roofed balcony extends from each side entrance to the front entrance. The assembly hall is designed to be a grand auditorium for miscellaneous gatherings. It is in the form of an irregular cross, 55 feet at its longest angle, and has about 1,400 feet of floor. From the level of the ceilings of the side rooms it is spanned by a truss-arched roof at a height of 24 feet above the centre of the hall. It is lighted by the rotunda above, and an ornamental fountain plays in the centre below. On the walls are 200 tablets, of which number 92 are used by the counties of the State for the general statistics of each county, and the remainder given to individuals or firms. There are also committee-rooms, a ladies' parlor, invalids' room, post-office, telegraph-office, baggage-room, gentlemen's parlor, and the building will be a place where any citizen of the State can be at home, to entertain friends and dispatch business. The whole is surmounted by a handsome truss roof, from the top of whose arches a lighted open rotunda of glass and wood rises, crested with metallic ornaments and statues. The entire cost of the building does not exceed $10,000.

NO. 57½. SPONGE FISHERS OF TURKEY.

This building contains an exhibit of sponge and fruit, situated on south side of Fountain avenue, and north of Vermont State building and Turkish Café.

NO. 58. ILLINOIS STATE BUILDING.

Architects, Wheelock & Thomas. Size, 60 feet by 40 feet. Situated on State avenue, north of the United States Government Buildings; the headquarters of the Illinois commissioners.

NO. 58½. BETHLEHEM BAZAAR.

Located on Fountain avenue, adjoining Jerusalem Bazaar, and intended for sale of olive wood.

NO. 59. WISCONSIN STATE BUILDING.

Size, 50 feet by 49 feet. For the accommodation of the State Commissioners. Located on State avenue, north of the United States Government Exhibition Buildings.

NO. 59½. SCREW FOG-HORN AND BELL.

Situated at north-west corner of Belmont and State avenues. Exhibit consists of one caloric engine, which pumps air for fog-horn; tank for air; and stationary engine.

NO. 60. MICHIGAN STATE BUILDING.

Size, 48 feet by 53 feet. On State avenue; built of native woods and stone; interior with raised panel work; marble wainscoting; parquette floors, all highly finished. Contains reception, commissioners', dressing, parcel, three reserve rooms, and ladies' parlor.

NO. 61. NEW HAMPSHIRE STATE BUILDING.

Size, 30 feet by 40 feet; two projections, 9 feet by 15 feet each. In the style of an Italian villa, two stories in height, and containing ten rooms, the roof protected by an awning and used for an outlook. This exhibit consists of views of White Mountains scenery, and home of General John Stark, the hero of Bennington.

NO 62. CONNECTICUT STATE BUILDING.

Architect, D. R. Brown, from a design by Donald G. Mitchell. Size, 30 feet by 40 feet. This cottage is erected in the old Colonial style, somewhat modified, and is designed for the use of the citizens and exhibitors of the State of Connecticut. It is situated on State Avenue, not far distant from the United States Government Exhibition Buildings. Exhibit consists of the Royal Arms, which, before the revolution, hung above the Speaker's chair in the House of Representatives, at Hartford painted in 1724. Rustic chess stand, ham, nutmegs, frames, etc., made from the wood of the Charter Oak. Ancient furniture, clock, tile, settee, etc., etc.

NO 63. MASSACHUSETTS STATE BUILDING.

The structure is of wood, in the open timber mediæval style, having a main building 95 by 80, two stories high, with wings on either side, 26 by 60, one story high. The location chosen is a sightly one, near the English building and next to that erected by Connecticut. A spacious porch makes the main entrance on the avenue, and the visitor enters directly into an audience room (31-6 by 37-6,) the floor of which is laid with large red and black tiles. The room has an open timber ceiling. Opening from this audience room on the right is the room designed for the State Commission, 26 by 21, and farther along on the same side is located the room set apart exclusively for members of the press from Massachusetts, which is supplied with all the needed conveniences for rapid communication with the mails and telegraph lines. Between these rooms, in a recess, are the stairs leading to the second story of the main building, and the space between the State committee's room and the press headquarters, back of this stairway is designed for a private apartment opening from either of the two rooms named. On the left of the audience room and opening from it is a room, 26 by 32, designed for the use of the Board of Managers. The space not occupied by this room on the left of the audience room is equally divided between a private room for the Board of Managers and a ladies' reception room. Opening from the audience room is a hat and coat room, on the left, and a room for a post office on the right, each 21 by 14 feet. The second story is arranged with a spacious corridor running the entire length of the building, from which open on either side eleven chambers, each 12 by 14 feet in size. The main building has a pitched roof, the ridge pole being fifty feet from the ground, and above this rises a substantial tower twenty-five feet high, giving a finished effect and offering an excellent outlook.

NO 64. DELAWARE STATE BUILDING.

Size, 54 feet by 34 feet. Built in the Swiss-Gothic style, from native woods of the State. It is occupied by the State Commissioners, the first floor being used for reception rooms, while the second floor is devoted to business purposes. Is situated on State Avenue, north of the British Commission, opposite the New York State Commission.

NO 65. MARYLAND STATE BUILDING.

Size, 92 feet by 60 feet. For the use of the State Commissioners and visitors. Situated on State Avenue, north of the British Government buildings, and is built of wood, two stories high. This exhibit consists of minerals, woods, building stone, specimens of art by pupils of Maryland Institute and School of Art and Design, portraits of Governors, three engines by Baltimore and Ohio railroads, models of fish house and hatching house.

NO. 67. JAPANESE DWELLING.

Architect, Matsuo-Ehe, Tokio. Size, 102 feet by 48 feet. This building, usually called the Japanese Government Building, is intended as a dwelling house for Japanese workmen. The wood and other articles that enter into its composition, and also the vases and flowers in the surrounding garden, were imported from Japan, and all the work has been done by Japanese artisans. It is situated south of the British buildings.

NO. 68. WEST VIRGINIA STATE BUILDING.

Size, 115 feet by 40 feet. Northwest of the Catholic Total Abstinence Fountain, built of wood, two stories high. Headquarters for State Commissioners and visitors from West Virginia. The exhibit consists of twenty pyramids of coal, mineral waters, ores, agricultural products, oils, tobacco, building stone, veneers, salt, glass, and a memorial shield made of seventy-eight varieties of wood.

NO. 69. CANADIAN LOG HOUSE.

Size, 75 feet by 56 feet. Canadian Commission is one story high, constructed of logs, and located close by the British Government buildings. It constitutes an exhibit of the timbers of Canada.

NO. 70. MISSOURI STATE BUILDING.

Architect, L. C. Miller, St. Louis.—Size, 58 feet by 48 feet, with tower. Location, State Avenue, George's Hill. Headquarters of Board of State Centennial Managers, organized by State Legislature; President, Thomas Allen; Secretary, J. L. Tracy. Exhibits in Main Hall, Education Department, Mineral Annex, Agricultural Hall.

NOS. 71, 72, 73. BRITISH GOVERNMENT BUILDINGS.

Architect, Thomas Harris, of London.—Size, No. 1, 5,000 sup. feet; No. 2, 1,200 sup. feet. These edifices have been erected for the use of the members of the Royal Commission. The large one is the residence of the Commissioners and delegates, while the smaller furnishes accommodations for the members of the staff. They are built in a picturesque, half-timbered style, essentially English, and are located north of Machinery Hall. A bake house and laundry are also attached to the above.

These valuable buildings having been donated to the city of Philadelphia, the following official action was taken by the city government, on Wednesday, Nov. 22:

Whereas, The Government of Great Britain having, by his Grace the Duke of Richmond and Gordon, presented to the city of Philadelphia the building erected in Fairmount Park for the use of the commission during the International Exhibition, known as St. George's House, it is hereby

Resolved, By the Select and Common Councils of the city of Philadelphia, That the same be accepted as an expression of good will and kindly feeling to the municipality, and that the building be carefully preserved as a memorial of the broad and liberal spirit which prompted the gift, and as an enduring monument of the auspicious part taken in the International Exhibition, Philadelphia, 1876, by the United Kingdom of Great Britain and Ireland, the Dominion of Canada and British Colonies, and the Empire of India.

The resolution of request to his Honor, the Mayor, is as follows:

Resolved, By the Select and Common Councils of the city of Philadelphia, That his Honor, the Mayor, be and is hereby requested to have the resolution of thanks to her Brittanic Majesty's Government properly engrossed and forwarded through Colonel Herbert Bruce Sanford, R. A. British Executive Commissioner, to the Duke of Richmond and Gordon, K. G., lord president of the Council, and that the thanks of the Select and Common Councils of the city of Philadelphia be and are hereby also tendered Colonel Sanford for the good will shown by him toward the city in this transaction.

NO. 74. NEW YORK STATE BUILDING.

Architects, Croff & Camp. Size, 60 feet by 34 feet. The Commissioners of the State of New York have offices in this building. It is a two story structure, surrounded by about half an acre of ground. It is situated on State avenue, north of the British buildings.

NO. 75. COL. LIENARD'S GEORAMA.

Designer, Col. Lienard, Paris. Size, area 1,250 square feet. An open air exhibit, models of the cities of Paris and Jerusalem, in gypsum. The contour of the ground is shown, and the streets appear fully delineated. It is in the centre of Fountain avenue, at the head of the lake.

NO. 76. POP-CORN BUILDINGS.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 41 feet by 32 feet each. J. A. Baker, Dayton, Ohio. One of these buildings is situated on Fountain Avenue, opposite the northern extremity of the lake; the other is on Agricultural Avenue, east of and opposite the New England Farmers' Home and Modern Kitchen. They are devoted exclusively to the sale of pop-corn, and are built of wood, one story high.

NO. 77. CIGAR STANDS.

The stands are located at various points north of the Avenue of the Republic, and west of Belmont avenue.

NO. 78. SODA WATER STANDS.

These stands are situated at various points north of the Avenue of the Republic, and west of Belmont Avenue.

NO. 79. TUNISIAN CAFE AND BAZAAR.

A decorated pavillion with stained glass windows, designed for the display of Tunisian products. Situated on Fountain Avenue, north of Pennsylvania State building.

NO. 80. CHRISTOPHER COLUMBUS MONUMENT.

Located at the corner of Belmont and Fountain Avenues. It was erected by the Columbus Monument Association. It is of colossal size, and represents the Genoese navigator in a standing posture, with the right hand resting on a globe, and the left holding a chart; an anchor and rope indicating his occupation.

NO. 81. DRINKING FOUNTAIN.

Size, 25 feet in diameter. Erected by the Sons of Temperance of Pennsylvania. This fountain is built of wood, the structure inclosing it being circular in form, and it is situated at the junction of Fountain and Belmont Avenues. The Singer & Talcot drinking fountain is a marble fountain, situated between the Bethlehem Bazaar and Tunisian Café.

NO. 82. "TROIS FRERES PROVENCAUX" RESTAURANT.

Architect, Lehman, of Paris. Size, 177 feet by 110 feet. Louis Goyard, Proprietor. A two story frame structure, situated on the corner of Belmont and Fountain Avenues. It has large garden surroundings, and is a duplicate of the restaurant of the same name in Paris, as regards its management.

NO. 83. NEW YORK "TRIBUNE" BUILDING.

Architect, E. E. Rath. Size, 30 feet by 21 feet. New York Tribune, New York. A small octagonal wooden building, with verandas and a high tower-like roof. It is located close to the French restaurant and the lake, and is used as an office for the correspondents and reporters of "The Tribune."

NO. 84. THE WORLD'S TICKET OFFICE.

Architect, H. J. Schwarzmann. Size, 60 feet square. Cook, Son & Jenkins, London, New York and Philadelphia. Situated immediately north of the eastern end of Machinery Hall. It is hexagonal in form, and contains a main hall and four private offices. Tickets to all parts of the world are offered for sale, and ornamental articles manufactured in Palestine are exhibited.

NO. 85. PRESSED FUEL COMPANY' BUILDING.

Polygon, 24 feet in diameter. E. F. Loiseau, Philadelphia, Constructed of iron and situated in a garden plot on the Avenue of the Republic, west of the lake and opposite to Machinery Hall. It exhibits the fuel in a state of combustion, to demonstrate its economy and adaptability.

NO. 86 SPANISH GOVERNMENT BUILDING.

Decagonal, 50 feet in diameter. A one-story frame building, situated on the Avenue of the Republic, west of the Catholic Total Abstinence Fountain. Intended as headquarters of the Spanish soldiers.

NO. 86½. SPANISH EXHIBITION BUILDING.

Architect, Alexander D. Bary. Size, 80 feet by 100 feet. Constructed of wood, in a style similar to Machinery Hall; adjacent to Spanish Engineers' Pavilion.

NO. 87. UNITED STATES SIGNAL OFFICE.

This exhibit consists of a field telegraph train, with battery, wire wagons, lance trucks, a portable signal tower and other signaling appliances. It is situated on State Avenue, opposite the English Government building.

NO. 88. TENNESSEE STATE HEADQUARTERS.

A circular tent, containing specimens of minerals, also a portable charcoal stove patented and exhibited by Rice Moore, of Nashville, Tennessee. Situated on State Avenue, between the Maryland and Iowa buildings.

NO. 89. MISSISSIPPI STATE BUILDING.

Size, 42 feet by 25 feet. Situated on State Avenue, opposite and west of the Japanese Dwelling. The wood used in this structure is from the State of Mississippi, and numbers some hundred varieties in all.

NO. 90. GEORGE'S HILL RESTAURANT.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 112 feet by 72 feet. Talman & Kohn, Philadelphia. Located in the western portion of the grounds, on George's, Hill, in the vicinity of the State buildings. It is a one-story structure, built of wood and is also called the Hebrew Restaurant.

NO. 91. BISHOP RICHARD ALLEN'S MONUMENT.

Size, base 6 feet by 6 feet; height, 16 feet. Erected in memory of the Rev. Richard Allen, founder and first bishop of the African Methodist Episcopal Church; situated between Fountain and State Avenues, west of the United States Government Buildings.

NO. 92. BOSTON "DAILY ADVERTISER" AND BOSTON "HERALD."

Size, 29 feet by 16 feet. A one-story frame building, situated on Fountain Avenue opposite north-west corner of Machinery Hall; used as the headquarters of the correspondents and attaches of the newspapers erecting it.

NO. 93. AMERICAN NEWSPAPER EXHIBITION.

Architect, M. J. Morill, Brooklyn, N. Y. Size, 70 feet by 46 feet. Geo. P. Rowell & Co., New York City. A two-story frame structure of Swiss architecture, on Fountain Avenue, near the lake. It contains a large hall, and a reading-room supplied with newspapers from all parts of the United States. In April, 1876, the United States published regularly 8,129 newspapers, a number which exceeds the combined issues of all the other nations of the earth. Regular files of most of these newspapers, and sample copies of all, are alphabetically arranged for exhibition, and a printed catalogue of the whole may be obtained for twenty-five cents.

NO. 94. CALIFORNIA STATE BUILDING.

Size, 55 by 105 feet. A two-story frame building, situated on State Avenue, opposite the British Government buildings. It contains accommodations for the State Commissioners and visitors, also a large hall for the purpose of exhibiting specimens of the agricultural productions of California.

NO. 95. CENTENNIAL FIRE PATROL, NO. 1.

This building is situated at the corner of Belmont and State Avenues, and contains two steam fire engines and one truck.

NO. 96. TURKISH CAFE.

Architect, Pierre Montani. Size, 51 by 65 feet. Turkish Commission. An octagonal frame building, with a coffee-room, parlors, and bazaars, situated on a walk between Fountain Avenue and the Avenue of the Republic, near their junction north of Machinery Hall.

NO. 97. FRANK LESLIE'S PAVILION.

This building is situated at eastern end of lake, on Belmont Avenue, adjoining the office of Cook, Son & Jenkins. It is octagonal in shape, Moorish in design, and highly ornamented. It is used as an office of Frank Leslie's publications.

NO. 98. IOWA STATE BUILDING.

Size, 40 by 53 feet. This is a two-story frame building, with portico in front and bay windows on both sides, located on State Avenue between the Missouri and Tennessee buildings, and used as a headquarters for Commissioners from this State.

NO. 99. RHODE ISLAND STATE BUILDING.

Architects, Wm. R. Walker and T. J. Gold, Providence, R. I. A building of combined Swiss and Gothic architecture, situated on State Avenue, north of the Mississippi State building.

NO. 100. VERMONT STATE BUILDING.

Architect, Lamos, Ticonderoga, Vt. A building of Doric architecture, north-west of Machinery Hall, and near Fountain Avenue. It contains an Estey organ, from Brattleboro', Vt., and files of Vermont newspapers

NO. 101. MEMORIAL HALL (ART GALLERY.)

Size, 365 by 210 feet. Architect, H. J. Schwarzman, Contractor, R. J. Dobbins. Iron work furnished by Edgemoor Iron Co., Pencoyd Rolling Mills, Kittredge Cornice Co. Stone work furnished by Sargent & Co., Westham Granite Co., Conshohocken Stone Co., S. F. Prince & Co., Excelsior Brick Co. Glass furnished by Benjamin H. Shoemaker, Ward & Co., and J. M. Albertson. Memorial Hall, built at a cost of $1,500,000, by the State of Pennsylvania and City of Philadelphia, is placed at the disposal of the Centennial Commission, to be used during the Exhibition as an Art Gallery, after which it is designed to make it the receptacle of an Industrial Art Museum, similar to the South Kensington Museum, at London. The design is modern renaissance, and the structure is fire-proof. It covers an acre and a half, and is 365 feet long, 210 feet wide, and 59 feet high, over a basement 12 feet high. A dome, rising 150 feet above the ground, surmounts the centre, capped by a colossal ball, from which rises the figure of Columbia. The main front of this building looks southward, displaying a main entrance in the centre consisting of three arched doorways, a pavilion on each end, and two arcades connecting the pavilions with the centre. The entrance is 70 feet wide, to which there is a rise of 13 steps. Each of the doorways is 40 feet high and 15 feet wide, opening into a hall. In each pavilion there is a window 12½ feet by 34 feet, eight in all, which will be used for the display of stained glass, glass paintings, etc. The arcades designed to screen the long walls of the galleries each consist of five groined arches, and form promenades looking outward over the grounds and inward over open gardens extending back to the main wall of the building. These garden-plots are each 90 feet by 36 feet, ornamented in the centre with fountains, and intended to display statuary. The rear or north front of the building is of the same general character as the main front, but, in place of the arcade, has a series of arched windows, twelve in number, with the entrance in the centre. Between the pavilions is the grand balcony, a promenade 275 feet long and 45 feet wide, elevated 40 feet above the ground, and overlooking to the northward the grounds of the Park. On each front of the buildings the entrances open into halls, 82 feet long, 60 feet wide, and 53 feet high. These, in turn, open into the centre hall, 83 feet square, the ceiling rising over it 80 feet in height. From the east and west sides of this central hall extend the galleries, each 98 feet long, 48 feet wide, and 35 feet high. These galleries have temporary divisions for the better display of paintings, and, with the central hall, form a grand hall 287 feet long and 83 feet wide, capable of comfortably accommodating 8,000 persons. From the galleries doorways open into two smaller galleries, 89 feet long and 28 feet wide. These open north and south into apartments connecting with the pavilion rooms, and forming two side-galleries 210 feet long. Along the whole length of the north side of the main galleries and central hall extends a corridor 14 feet wide, opening on its north line into a series of rooms, twenty-three in number, designed for studios and smaller exhibition rooms. All the galleries and the central hall are lighted from above; the pavilions and studios from the sides. The pavilion and central hall are designed especially for the exhibition of sculpture. This building gives 75,000 square feet of wall space for painting, and 20,000 square feet of floor space for statues, etc. The skylights throughout are double, the upper being of clear glass and the under of ground glass.

The erection of the building was begun July 4, 1874, and finished March 1, 1876,

NO. 102. ANNEX TO ART GALLERY.

Architect, H. J. Schwarzmann. Great as is the space afforded in Memorial Hall, the applications from American and foreign artists proved so greatly in excess of its capacity as to require the erection of a much more spacious building. This, though only of brick, harmonizes architecturally with the Memorial Hall, and is to be permanent. It stands just in the rear of the original Art Gallery. It affords 60,000 square feet of wall space available for paintings, and contains 30 galleries, each 40 feet square, besides 4 galleries, each 100 feet long by 54 feet wide, and two transverse central corridors, 20 feet wide.

NO. 103. THE B'NAI B'RITH MONUMENT.

Erected by the Israelites to religious liberty, and situated between the Art Gallery and its annex.

NO. 104. PHOTOGRAPHIC EXHIBITION BUILDING.

Architect, H. J. Schwarzmann. Situated on the Avenue of the Republic, north of the Main Building, and east of Memorial Hall. It is a one-story building, containing a single large chamber, with screens projecting from the side walls and forming alcoves for exhibition purposes.

NO. 105. VIENNA BAKERY, OR COMPRESSED YEAST BUILDING.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 146 feet by 105 feet. Gaff, Fleischmann & Co., Blissville, Long Island, N. Y. Designed to exhibit the advantages of using compound yeast in baking. It also contains a coffee house.

NO. 106. ANNEX TO MAIN BUILDING (CARRIAGES, STOVES, &C.)

Architect, H. J. Schwarzmann. This structure is built of corrugated iron, wood and glass; a one-story building, with sky-lights, situated on Avenue of the Republic, immediately north of the Main Building, and east of the Department of Public Comfort.

NO. 107. SWEDISH SCHOOL-HOUSE AND METEOROGRAPH.

Architects, Isæus & Jacobsson. Size, 40 feet by 50 feet. Situated in the Swedish Government grounds, north of the Main Exhibition Building. A one-story frame house, containing school-rooms and the interior arrangement of a Swedish school-house. The frame-work for the building was imported from Sweden, and is on exhibition by G. O. Wengstion, of Stockholm.

Meteorograph.—A one-story latticed structure east of Swedish school-house, surmounted by semi-globular cups, connected with apparatus in the interior, showing the velocity of the wind.

NO. 108. JAPANESE BAZAAR.

This building is situated on Landsdowne drive, immediately north of the Department of Public Comfort, and is designed for sale of Japanese wares.

NO. 109. JUDGES' HALL.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 152 feet by 113 feet. A two-story frame building, situated north of the Main Exhibition Building, containing ten committee rooms and four private rooms for the judges; also one large hall in the centre, and a smaller hall in the rear. It is intended for the accommodation of the International Board of Judges. The President of the Centennial Commission and the Chief of the Bureau of Awards have offices in this building.

NO. 110. CENTENNIAL PHOTOGRAPHIC ASSOCIATION BUILDING.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 150 feet by 30 feet. The Photographic Association have erected a one-story frame building, located north of the Main Exhibition Building on the east side of Belmont avenue. It contains one room for the exhibition of photographs, and three rooms for photographers for working purposes.

NO 111. SHEET METAL PAVILION.

Size, 22 feet by 40 feet. Architect, E. C. Ryer. Situated on Lansdowne drive and Belmont avenue, opposite lake. Marshall Bros. & Co., Girard avenue below Front street, Philadelphia, Pa., exhibit the utilization of galvanized and leaded sheets in the construction of this building. American polished, cleaned, and refined sheets, galvanized cemetery and house work, and corrugated iron. The building itself is a specimen of the workmanship of the Kittredge Cornice and Ornament Co., Salem, O., and illustrates the application of sheet metal to architectural purposes.

NO. 112. GERMAN EMPIRE PAVILION.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 83 feet by 33 feet. Constructed of stone, one story high, furnishing accommodations for the Imperial Commissioners as well as German visitors. It is located on Lansdowne drive, between Belmont and Agricultural avenues.

NO. 113. PENNSYLVANIA RAILROAD OFFICE.

Architect, J. M. Wilson, Engineer of Bridges and Buildings, Pennsylvania Railroad Company. Octagon, 75 feet in diameter. A two-story frame building, situated on the northeast corner of Belmont Avenue and Avenue of the Republic, adjoining the Judges' Hall. It is designed for the general ticket office of the four great trunk lines, viz.: New York Central, Erie, Baltimore and Ohio, and Pennsylvania railroads. Tickets are sold to all points, and information is furnished regarding routes of travel.

NO. 114. OFFICE U. S. CENTENNIAL COMMISSION.

The western wing of the Public Comfort Building. It contains offices and committee rooms, and conveniences for newspaper correspondents.

NO. 115. BRAZILIAN EMPIRE PAVILION.

Architect, H. J. Schwarzmann. This structure is of wood, situated on Lansdowne drive, adjoining the German Government building, and intended for use of the Brazilian Commission.

NO. 116. THE DAIRY ASSOCIATION BUILDING.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 76 feet by 25 feet; pavilion, 80 feet by 30 feet. Situated on the north side of Lansdowne Valley, southwest of Horticultural Hall. It is a two-story rustic building, and the surrounding grounds are laid out as a garden in which is a pavilion for the additional accommodation of visitors.

NO. 117. RESTAURANT LAFAYETTE.

Architect, H. J. Schwarzmann. Size, 130 feet by 30 feet. This is a two-story wooden building, located northwest of the Art Gallery, between Landsdowne drive, and the brook. It is conducted on the French plan.

NO. 118. DEPARTMENT OF PUBLIC COMFORT.

Architects, Balderston & Hutton, Philadelphia. Size, 264 feet by 112 feet. Department of Public Comfort Company, Limited. W. Marsh Kasson, Chairman, Philadelphia. Located on the corner of the Avenue of the Republic and Agricultural Avenue, opposite the northwestern corner of the Main Exhibition Building, and fronting the Esplanade. It is a two-story frame building, containing a reception room and ladies' parlor, free to all, barber shop, coat and baggage room, lunch counter, and lavatories. Tickets for places of amusement are on sale, and a daily register of all visitors is kept. The western section of the building is occupied by offices of the Centennial Commission. Office desk room is afforded to exhibitors. The centre portion of the building is surmounted with an open-air gallery, giving a view of the grounds.

NO. 119. EMPIRE TRANSPORTATION COMPANY'S BUILDING.

Architects, Wilson Bros. & Co., Philadelphia. Size, 70 feet by 60 feet. Empire Transportation Co., Philadelphia. This structure is located north of the eastern end of the Main Exhibition Building, and exhibits by models the method of transportation used by the Empire Transportation Company and its auxiliaries in the United States.

NO. 120. FRENCH GOVERNMENT PAVILION.

Architect, De Dartein, France. Size, 100 feet by 50 feet. Department of Public Works, France. Is constructed of brick and iron, and exhibits models in relief and designs of all the public works of France executed during the last few years; also a collection of books and publications relative thereto. It is situated west of the Art Gallery, on Lansdowne drive.

NO. 121. CENTENNIAL FIRE PATROL.

Architect, H. J. Schwarzmann. Size, (1.) 60 feet by 58 feet. (2.) 84 feet by 74 feet. The Fire Patrol is accommodated in two buildings, built of wood, one-story high, containing halls for the engines, stalls for the horses, and dormitories for the firemen. The smaller house is at the north-east corner of the Main Exhibition Building, and the larger at the intersection of Lansdowne drive and Belmont Avenue. They are supplied with steam fire engines, hose trucks, ladders, and patent fire extinguishers.

NO. 122. THE PENNSYLVANIA EDUCATIONAL HALL.

Architects, Peters & Burger. Size, 148 by 100 feet. The object of this Hall is the exhibition of the educational interests of the State of Pennsylvania. It is situated north of the Art Gallery, fronting on the Lansdowne drive. The building is octagonal in shape, and contains thirty-two alcoves for the display, a large assembly room and a reception room.

NO. 123. TELEGRAPHIC BUILDING.

Architects, Balderston & Hutton, Philadelphia. Size, 80 feet by 75 feet. Managing Director of all Telegraph lines, W. J. Philips. The reception room of the Public Comfort building opens from the east into the telegraphic department, which furnishes communication with every portion of the world. It is a one-story frame building opposite the north-west corner of the Main Exhibition Building, fronting the Esplanade. All of the instruments and appliances of the latest designs are on exhibition and in use.

1. Philips, Wm. J., Philadelphia, Pa.—Printing telegraph instrument, combining the bell, dial and printing telegraph in one instrument.
2. Phillips, Eugene F., Providence, R. I.—Covered wire for telegraphic purposes.
3. Gray, Elisha, Chicago, Ill.—Electroharmonic telegraph, including apparatus for transmitting tunes and eight or more messages simultaneously.
4. Atlantic & Pacific Telegraph Co., Philadelphia, Pa.—Automatic and duplex telegraph apparatus.
5. Gray & Barton, Western Electric Telegraph Co., Chicago, Ill.—Printing telegraph instrument, with unison attachment.
6. Frost & Hanline, Philadelphia, Pa.—Automatic thermostat for fire-alarm telegraph.
7. Brooks, David, Philadelphia, Pa.—Underground cables for telegraph wires.
8. Gamewell, J.N. & Co., New York, N.Y.—American fire-alarm telegraph, with non-interference repeaters and signal-boxes and mechanical gong apparatus.
9. American District Telegraph Co., Philadelphia, Pa.—District telegraph signal-boxes, with self-starting registers for messengers, guides and interpreters.
10. Philadelphia, Reading & Pottsville Telegraph Co., Philadelphia.—Duplex and Morse telegraph apparatus.

NO. 124. AMERICAN FUSEE COMPANY'S BUILDING.

Size, 14 feet by 14 feet. W. R. Davenport, New York. Situated on Lansdowne drive, north of the Judges' building.

NO. 125. GLASS MAGAZINE.

Architect, H. J. Schwarzmann. Size, 40 feet by 40 feet. Klautsheck, Thomas & Stuart, Philadelphia.—This magazine is erected adjoining the Photographic Association Building, opposite the lake. It is constructed mainly of glass from the factories of the above firm, and contains a full assortment of plate and window glass, and glass shades for the accommodation of exhibitors; is two stories high, and is connected by a bridge with Belmont Avenue.

NO. 126. MOORISH VILLA.

Constructed in Morocco by native workmen; exhibited by Dr. Max Schmidl, for the display of native products and fancy articles; conducted by Abd el Kader ben Katib. It is situated on Lansdowne drive, opposite Sheet Metal Pavilion.

NO. 127. AMERICAN BIBLE SOCIETY PAVILION.

Architect, I. C. Sidney. Size, 17 feet by 23 feet. Located near Lansdowne Valley, south of Horticultural Hall, close to the bridge; oval in shape, and surmounted by a carved roof with a projecting cornice. It bears the inscription, "The Bible without note or comment." In front is an open Bible, and over it the text from Jeremiah xxii. 29: "O earth, earth, earth, hear the word of the Lord." Only Bibles and Testaments are sold.

NO. 128. HUNTERS' CAMP.

"*Forest and Stream*" Publishing Co., N. Y., Wm. C. Harris, Manager.—This camp illustrates sportsmen's life in the backwoods, and contains what is known as a permanent camp, built of logs and bark, with all the appurtenances of hunting and fishing, including portable boats, sporting firearms, rods and fishing tackle ready for use, portable cooking apparatus, specimens of game birds, a kennel of sporting dogs, etc., etc. An additional feature is a lake or pond stocked with game, fish and a running stream containing brook trout. It is located in the ravine south of Horticultural Hall.

NO. 129. OFFICE WATER DEPARTMENT.

A frame building situated on Belmont Avenue, next to the Glass Magazine.

NO. 130. SODA WATER STANDS.

These are located at various points east of Belmont Avenue and south of Fountain Avenue.

NO. 131. CIGAR STANDS.

These are situated at various points east of Belmont Avenue and south of Fountain Avenue.

NO. 132. SINGER SEWING MACHINE BUILDING.

Architect, James Van Dyke, Elizabeth. Size, 81 feet by 56 feet. Singer Manufacturing Co., New York City. Contains an exhibit of every style of machine manufactured by the Singer Manufacturing Company, and samples of work. It is constructed of wood, and is located on Lansdowne drive, north of the Art Gallery.

NO. 133. MEDICAL DEPARTMENT.

Architect, H. J. Schwarzmann. Size, 65 feet by 32 feet 6 inches. This department is instituted for the immediate gratuitous relief of accidents and sudden cases of illness occurring within the Exhibition grounds. It is located in Lansdowne ravine equidistant from the Main Building and Horticultural Hall, and contains two wards of three beds each, for male and female patients. An ambulance is provided for the removal of patients to their homes or to city hospitals.

Officers.—William Pepper, M. D., Medical Director; Theodore Herberte, M. D., Secretary and Resident Physician; Jacob Roberts, M. D., Member of Staff; S. W. Gross, M. D., Member of Staff; H. C. Wood, M. D., Member of Staff; R. G. Curtin, M. D., Member of Staff; Hamilton Osgood, M. D., Member of Staff; De Forest Willard, M. D., Member of Staff.

NO. 134. PORTUGUESE GOVERNMENT BUILDING.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 55 feet by 51 feet. A one-story wooden structure, with cupola, located on the northeast corner of Agricultural Avenue and Lansdowne drive, and used to accommodate Commissioners and visitors from Portugal.

NO. 135. BANKERS' EXHIBIT.

Architect, James H. Windrim, Philadelphia. Size, 69 feet by 41 feet. Erected by the banks, bank officers, and bankers of the country for the exhibition of coins and currency. It is located east of the Art Gallery, and between the Photographic Gallery and the Vienna Bakery.

NO. 136. FRENCH GLASS EXHIBIT.

R. De Bergne. This building is constructed entirely of glass, and situated on Landsdowne drive, adjoining Moorish Villa. Is designed to show window glass, tiles, marble, onyx, &c.

NO 137. KINDERGARTEN.

Located north of Carriage Annex on Landsdowne drive, designed to show object teaching. Is a wooden structure, one story high.

NO. 138. CENTENNIAL POLICE STATION.

Situated at north-east corner of Main Building, designed for accommodation of police, with cells for prisoners.

NO. 139. PHILADELPHIA PAVILION.

Architects, H. J. Schwarzmann, Hugh Kafka. Size, 88 by 66 feet. For the accommodation of the municipal government of the city of Philadelphia. It contains a hall and parlor, and a room devoted to the use of the Park Commission. It is a one-story frame building, situated on Landsdowne drive, east of Horticultural Hall.

NO. 140. MUSIC PAVILION.

Pavilion with ornamented dome, situated in Lansdowne Ravine, near the bridge. For the use of bands.

NO. 141. BURIAL CASKET BUILDING.

Architect, N. B. Gleason, Rochester, N. Y. Size, 42 feet by 22 feet. Schuyler & Armstrong and S. Stein, proprietors. The exhibit consists of various designs of funeral caskets, shrouds, &c. It is a one-story frame house with turrets, and is situated on Lansdowne drive near the bridge, and north of Art Gallery Annex.

NO. 142. PERFORATED METALS.

This is a one-story building with sky-light, located between the Carriage Annex and Lansdowne drive, and designed to show the practicability of using perforated window blinds in dwellings.

NO. 143. RUBBER ROOFING.

This building is situated on Lansdowne drive, between the Carriage Annex and Pennsylvania Educational Hall. It is octagonal in shape, and surmounted by a tower ten feet high. The exhibit consists of rubber roofing.

NO. 144. OFFICE OF THE CUBAN ACCLIMATION GARDEN.

Architect and manager, Jules Lachaume. Size, 12 feet by 25 feet. This structure is designed to show tropical produce, seeds, vegetables, physiology, and rustic work, and is situated directly south of Horticultural Hall.

NO. 145. NAVAL GROUP.

This bronze statue is situated on the plaza immediately west of Art Gallery.

NO. 146. DYING LIONESS.

This bronze work of art is in the plaza due east of Art Gallery.

NO. 151. HORTICULTURAL HALL.

Size, 383 by 193 feet. Architect, H. J. Schwarzman. Contractor, John Rice, Philadelphia. Wrought iron furnished by Keystone Bridge Company, Pittsburg, Pa. Cast iron furnished by Samuel J. Cresswell, Philadelphia. Painting by Joseph Chapman, Philadelphia. Masonry by Moore & Scattergood, Philadelphia. Appropriations of the city of Philadelphia, have provided the Horticultural building, which is to remain in permanence as an ornament to Fairmout Park. It is on the Lansdowne terrace, a short distance north of the Main Building and Art Gallery, and has a commanding view of the Schuylkill river and the north-western portion of the city. The design is in the Moorish style of architecture of the twelfth century, the principal materials externally being iron and glass. The main floor is occupied by the central conservatory, 230 by 80 feet, and 55 feet high, surmounted by a lantern 170 feet long, 20 feet wide, and 14 feet high. Running entirely around this conservatory, at a height of 20 feet from the floor, is a gallery 5 feet wide. On the north and south sides of this principal room, are four forcing houses for the propagation of young plants, each of them 100 by 30 feet, covered with curved roofs of iron and glass. Dividing the two forcing houses in each of these sides is a vestibule 30 feet square. At the centre of the east and west ends are similar vestibules, on either side of which are the restaurants, reception room, offices, etc. From the vestibules ornamental stairways lead to the internal galleries of the conservatory, as well as to the four external galleries, each 100 feet long and 10 feet wide, which surmount the roofs of the forcing houses. These external galleries are connected with a grand promenade, formed by the roofs on the rooms of the ground floor, which has a superficial area of 1,800 square yards.

The east and west entrances are approached by flights of blue marble steps from terraces 80 by 20 feet, in the centre of each of which stands an open kiosque 20 feet in diameter. The angles of the main conservatory are adorned with eight ornamental fountains. In the basement, which is of fireproof construction, are the kitchen, store-rooms, coal houses, ash pits, heating arrangements, etc.

The ground was graded and the foundation of Horticultural Hall laid on May 1, 1875. The building was finished April 1, 1876. It covers an area for exhibition purposes of 122,500 square feet, and cost about $300,000. This building will be permanent.

NO. 152. AGRICULTURAL HALL.

Size, parallelogram, 820 feet by 540 feet. Architect, James H. Windrim, Philadelphia. Contractor, Philip Quigley, Wilmington, Del. Wrought iron furnished by Allison & Sons, Philadelphia. Erectors, Bell Brothers. The Agricultural Exhibition Building stands north of Horticultural Hall, on the eastern side of Belmont avenue. A novel combination of materials is illustrated in its construction. It consists of a long nave crossed by three transepts, all composed of Howe truss arches of Gothic form. The four courts inclosed between the nave and transepts, as also the four spaces at the corners of the building, having the nave and transepts for their sides, are roofed in and form spaces for exhibits. The building covers an area of about ten acres. Stock yards for the exhibition of horses, cattle, sheep, swine, poultry, etc., are in the vicinity of the exhibition grounds.

The contract was made July 26th, 1875, and the building was begun in September, 1875, and finished in April, 1876. It cost $260,000.

NO. 153. WOMEN'S PAVILION.

Architect, H. J. Schwarzmann. Size, 23,368 square feet. This pavilion was erected by money raised through the exertions of the women of the United States, and is devoted exclusively to the results of women's labor. It is built of wood, and is situated on Belmont avenue, adjacent to the Horticultural grounds.

NO. 154. FROBEL'S KINDERGARTEN.

Architect, James P. Sims. Size, 45 feet by 18 feet. Situated north-east of the Women's Pavilion. Contains specimens of school work, and illustrates the operation of kindergarten teaching.

NO. 155. NEW JERSEY STATE BUILDING.

Architect, Carl Pfeiffer, New York. Size, 56 feet by 82 feet. A two-story wooden building erected for the accommodation of the New Jersey State Commissioners, containing offices and private rooms. It is situated on Belmont avenue, adjacent to the Women's Pavilion. Messrs. Hall & Son, of Perth Amboy, N. J., furnished the brick in the chimney, and Messrs. Maurer & Brevier, of Perth Amboy, the tiles used in the roofing of the building.

NO. 156. THE "SOUTH" RESTAURANT.

Architects, H. J. Schwarzmann, E. Mercer, Atlanta, Ga. Size, 182 feet by 92 feet. Situated on the north-west corner of State and Belmont avenues, and is a one-story frame building.

NO. 157. KANSAS AND COLORADO STATE BUILDING.

Architect, E. F. Karr. Size, 132 feet square. This structure is intended for the accommodation of the Commissioners from the States of Kansas and Colorado, and also for exhibition purposes. It is a two-story wooden building, containing an exhibition hall, private rooms and offices, and is situated east of the Southern Restaurant. The Kansas exhibit consists of agricultural products, minerals, silk cocoons, building stone, cotton, plaster of Paris, birds and animals.

The Colorado exhibit embraces mineral, geological, and ornithological specimens, petrifications, views of Colorado scenery, the Maxwell cabinets of minerals, birds and animals of the Rocky Mountains, etc.

NO. 158. NEW ENGLAND FARMER'S HOME AND MODERN KITCHEN.

Size, 49 feet by 35 feet. Miss E. B. Southwick, Boston. A representation of a New England farmer's home 100 years ago, combined with a modern kitchen, thus illustrating 1776 and 1876. It is one story high, and situated on the corner of State and Agricultural avenues.

NO. 159. THE AMERICAN RESTAURANT.

Architects, H. J. Schwarzman, Hugh Kafka. Size, 300 feet by 200 feet. Tobiason & Heilbrun, Philadelphia. Situated between Agricultural and Horticultural Halls. The seating capacity is five thousand. The banquet room accommodates six hundred guests. The waiters speak various languages. There is a pavilion devoted to ice cream, etc. A bill of fare will be served either *a la carte* or *table d'hote.*

NO. 160. GERMAN RESTAURANT.

Architect, H. J. Schwarzmann. Size, 200 feet by 150 feet. Philip J. Lauber, Philadelphia. Contains three acres for garden arrangements, and is situated north of Horticultural Hall, on Lansdowne drive.

NO. 161. TEA AND COFFEE PRESS EXTRACT BUILDING.

Architects, Hayes & M'Ivor, Elmira, N. Y. Size, 100 feet by 45 feet. A two-story frame building, composed of four observatories connected by verandas. Located opposite the south-east corner of the Agricultural Building, and devoted to the exhibition of the process of making coffee, tea, and other extracts, by means of pressure caused by the expansion of the materials used.

NO. 162. BUTTER AND CHEESE FACTORY.

Size, 100 feet by 116 feet. A model factory, three stories high, built of wood, and situated east of the Agricultural Building, between it and Lansdowne drive.

NO. 163. SODA WATER STANDS.

These structures are located at various points east of Belmont and north of Fountain Avenues.

NO. 164. CIGAR STANDS.

These stands are found at various points east of Belmont and north of Fountain Avenues.

NO. 165. WAGON BUILDING.

Size, 144 feet by 196 feet. Constructed of wood, one-story high, situated north-east of Agricultural Hall, consists of three lines of sheds. Is used to display wagons, trucks, etc.

NO. 166. POMOLOGICAL BUILDING.

Size, 182 feet by 192 feet. Constructed of wood, one-story high, situated east of Agricultural Hall. Is designed for the exhibit of fruits in season.

NO. 167. BREWERS' BUILDING.

Architect, H. J. Schwarzmann. Size, 272 feet by 96 feet. Erected under the auspices of the United States Brewers' Association. Constructed of wood in the style of Machinery Hall, and situated on Lansdowne drive, opposite the north-east corner of Agricultural Hall. It contains a model brewery, and exhibits the several processes of manufacturing malt liquors.

NO. 168. THE HOUSE APIARY.

Size, 10 feet by 16 feet. J. S. Coe, Montclair, N. J. Exhibits thirty-two colonies of Italian, Corinthian and Cyprian bees at work making honey. Situated east of the Pomological Building.

NO. 169. PACIFIC GUANO COMPANY'S PAVILION.

Mr. John M. Gliddon, Manager. This is, in style, similar to a Moorish kiosk. The exhibit consists of various products of the soil, guano in its various processes of manufacture, models of company's works at Wood's Hole and Chisolius Island, fossil remains, etc., while several acres of ground, in close proximity to their pavilion, are planted in cotton, cane, tobacco, etc., to demonstrate the efficacy of their manufacture. The building is situated on Fountain Avenue, east of Women's Pavilion.

NO. 170. ANNEX TO HORTICULTURAL HALL, OR SPECIAL FLOWER PAVILION.

Architect, H. J. Schwarzmann. This building is made of glass and iron, located immediately north of Horticultural Hall, and is intended for the display of specialties in flowers.

NO. 171. WINDMILLS.

1 Eclipse Windmill Co., Beloit, Wis.—Three windmills for pumping water, grinding, etc.
2 U. S. Wind Engine & Pump Co., Batavia, Ill.—Two windmills.
3 Stover Wind Engine Co., Greencastle, Pa.—One windmill.
4 Hartford Pump Co., Hartford, Conn.—One windmill for raising water by compressed air.

NO. 172. HEADQUARTERS OF THE "PRACTICAL FARMER," (NEWSPAPER.)

Size, 10 by 16 feet. J. R. Garretson, Proprietor, Rochester, N. Y. Situated east of the Pomological Building. Office of the paper.

NO. 173. HAY PRESS.

Architect, W. P. Rockafellow, Albany, N. Y. Size, 48 feet front; wings, 12 by 20 and 12 by 24. P. K. Dedrick & Co., Albany, N. Y. Exhibits the perpetual baling press.

NO. 174. CENTENNIAL POLICE STATION.

A frame building situated east of Hay Press and Agricultural Hall, intended for accommodation of Centennial Guards.

NO. 175. SAFETY ELEVATED RAILWAY.

Roy Stone, Proprietor. This railroad is situated over Belmont Ravine, north of Horticultural Hall. It was designed by Roy Stone, and first erected at Phœnixville, Pa. Examined and fully approved by eminent engineers. Brought here as an exhibit and for conveyance of passengers under the concession to West End Railroad Co. Intended for rapid transit in cities, or for very cheap country railroad for passengers and freight.

NO. 176. BOILER HOUSE.

Situated east of Agricultural Hall, and furnishes steam for engine in that building.

NO. 177. VIRGINIA STATE BUILDING.

A frame structure one story high, with veranda all around, situated on State Avenue east of the Kansas and Colorado building, facing Horticultural grounds.

NO. 178. THE PROTECTIVE FIRE APPARATUS COMPANY OF NEW YORK.

Size, 8 by 10 feet. This is a one-story wooden building, situated on Agricultural Avenue, west of Agricultural Hall, and is designed to display fire extinguishers.

NO. 179. POP CORN STAND.

Situated at corner of Agricultural Avenue, near station of Narrow Gauge Railroad.

NO. 180. FOUNTAIN OF THE JORDAN L. MOTT IRON WORKS OF NEW YORK.

Located east of Horticultural Hall. This is an iron fountain 45 feet in diameter and 26 feet high. There are four figures at the base, and the top is surmounted by the design of "Venus Rising from the Sea."

In the interior of the different buildings are located several fountains of varied designs.

OPENING CEREMONIES OF THE INTERNATIONAL EXPOSITION, MAY 10, 1876.

1. NATIONAL AIRS, by the Orchestra, THEODORE THOMAS, Musical Director.

1. The Washington March.
2. Argentine Republic, (Marche de la Republica.)
3. Austria. Gott erhalte Franz den Kaiser.
4. Belgium. La Brabanconne.
5. Brazil. Hymno Brasileira Nacional.
6. Denmark. Volkslied—den tappre Landsoldat.
7. France. La Marseillaise.
8. Germany. Was ist des Deutschen Vaterland.
9. Great Britain. God Save the Queen.
10. Italy. Marcia del Re.
11. Netherlands. Wie neerlandsch bloed.
12. Norway. National Hymn.
13. Russia. National Hymn.
14. Spain. Riego's Spanish National Hymn.
15. Sweden. Volksongen, (Bevare Gud var Kung.)
16. Switzerland. Heil dir Helvetia.
17. Turkey. March.
18. Hail Columbia.

4. PRAYER by the RT. REV. BISHOP SIMPSON.

Almighty and everlasting God, our Heavenly Father. Heaven is thy throne and the earth is thy footstool. Before thy majesty and holiness the angels veil their faces, and the spirits of the just made perfect bow in humble adoration. Thou art the creator of all things, the preserver of all that exist, whether they be thrones or dominions or principalities or powers. The minute and the vast, atoms and worlds, alike attest the ubiquity of thy presence and the omnipotence of thy sway.

Thou alone art the sovereign ruler of nations. Thou raiseth up one and casteth down another, and thou givest the kingdoms of the world to whomsoever thou wilt. The past with all its records is the unfolding of thy counsels and the realization of thy grand designs. We hail thee as our rightful ruler, the king eternal, immortal and invisible, the only true God, blessed forever more.

We come on this glad day, O thou God of our fathers, into these courts with thanksgiving, and into these gates with praise. We bless thee for thy wonderful goodness in the past, for the land which thou gavest to our fathers, a land veiled from the ages, from the ancient world, but revealed in the fullness of time to thy chosen people, whom thou didst lead by thine own right hand through the billows of the deep, a land of vast extent, of towering mountains and broad plains, of unnumbered products and of untold treasures.

We thank thee for the fathers of our country, men of mind and of might, who endured privations and sacrifices, who braved multiplied dangers rather than defile their consciences, or be untrue to their God, men who laid on the broad foundations of truth and justice the grand structure of civil freedom.

We praise thee for the closing century, for the founders of the Republic, for the immortal Washington and his grand associates; for the wisdom with which they planned, and the firmness and heroism, which, under thy blessing, led them to triumphant success. Thou wast their shield in hours of danger, their pillar of cloud by day, and their pillar of fire by night. May we, their sons, walk in their footsteps and imitate their virtues.

We thank thee for social and national prosperity and progress, for valuable discoveries and multiplied inventions, for labor-saving machinery, relieving the toiling masses, for schools, free as the morning light for the millions of the rising generation, for books and periodicals scattered like leaves of autumn over the land, for art and science, for freedom to worship God according to the dictates of conscience, for a church unfettered by the trammels of state.

Bless, we pray thee, the President of the United States and his constitutional advisers, the Judges of the Supreme Court, the Senators and Representatives in Congress, the Governors of our several Commonwealths, the officers of the Army and the Navy, and all who are in official position throughout our land. Guide them, we pray thee, with counsels of wisdom, and may they ever rule in righteousness. We ask thy blessing to rest upon the President and members of the Centennial Commission, and upon those associated with them in the various departments, who have labored long and earnestly, amidst anxieties and difficulties, for the success of this enterprise.

May thy special blessing, O thou God of all the nations of the earth, rest upon our National guests, our visitors from distant lands. We welcome them to our shores, and we rejoice in their presence among us, whether they represent thrones, or culture, or research, or whether they come to exhibit the triumphs of genius and art, in the development of industry and in the progress of civilization. Preserve thou them, we beseech thee, in health and safety, and in due time may they be welcomed by loved ones again to their own, their native lands.

Let thy blessing rest richly on this Centennial Celebration. May the lives and health of all interested be precious in thy sight. Preside in its assemblies. Grant that this association in effort may bind more closely together every part of our great Republic, so that our Union may be perpetual and indissoluble. Let its influence draw the nations of earth into a happier unity. Hereafter we pray thee, may all disputed questions be settled by arbitration, and not by the sword, and may wars forever cease among the sons of men.

May the new century be better than the past. More radiant with the light of true philosophy, warmer with the emanations of a world-wide sympathy. May capital, genius and labor be freed from all antagonism by the establishment and application of such principles of justice and equity as shall reconcile diversified interests and bind in imperishable bands all parts of society.

We pray thy benediction, especially on the women of America, who for the first time in the history of our race, take so conspicuous a place in a national celebration. May the light of their intelligence, purity and enterprise shed its beams afar, until in distant lands, their sisters may realize the beauty and glory of Christian freedom and elevation. We beseech thee, Almighty Father, that our beloved Republic may be strengthened in every element of true greatness, until her mission is accomplished by presenting to the world an illustration of the happiness of a free people, with a free church, in a free State, under laws of their own enactment, and under rulers of their own selection, acknowledging supreme allegiance only to the King of kings and Lord of lords. And as thou didst give to one of its illustrious sons first to draw experimentally the electric spark from heaven, which has since girdled the globe in its celestial whispers of "Glory to God in the highest, peace on earth and good will to men," so to latest time may the mission of America, under divine inspiration be one of affection, brotherhood and love for all our race. And may the coming centuries be filled with the glory of our Christian civilization.

And unto thee, our Father, through Him whose life is the light of men, will we ascribe glory and praise, now and forever. Amen.

5. HYMN, BY JOHN GREENLEAF WHITTIER. Music by John K. Paine, of Mass
Organ and Orchestral accompaniment.

Our fathers' God! from out whose hand
The centuries fall like grains of sand,
We meet to-day, united, free,
And loyal to our land and Thee,
To thank Thee for the era done,
And trust Thee for the opening one.

Here, where of old, by Thy design,
The fathers spake that word of Thine,
Whose echo is the glad refrain
Of rended bolt and falling chain,
To grace our festal time, from all
The zones of earth our guests we call.

Be with us while the new world greets
The old world thronging all its streets,
Unveiling all the triumphs won
By art or toil beneath the sun;
And unto common good ordain
This rivalship of hand and brain.

Thou, who hast here in concord furled
The war flags of a gathered world,
Beneath our Western skies fulfill
The Orient's mission of good will,
And, freighted with love's Golden Fleece,
Send back the Argonauts of peace.

For art and labor met in truce,
For beauty made the bride of use
We thank Thee, while withal we crave
The austere virtues strong to save,
The honor proof to place or gold,
The manhood never bought nor sold!

O! make Thou us, through centuries long,
In peace secure, in justice strong:
Around our gift of freedom draw
The safeguards of Thy righteous law;
And cast in some diviner mould,
Let the new cycle shame the old!

6. PRESENTATION OF THE BUILDINGS TO THE UNITED STATES CENTENNIAL COMMISSION by JOHN WELSH, President of the Centennial Board of Finance.

MR. PRESIDENT AND GENTLEMEN OF THE UNITED STATES CENTENNIAL COMMISSION:—In the presence of the Government of the United States, and of the several distinguished bodies by whom we are surrounded, and in behalf of the Centennial Board of Finance, I greet you.

In readiness at the appointed time, I have the honor to announce to you that, under your supervision and in accordance with the plans fixed and established by you, we have erected the buildings belonging to us, and have made all the arrangements devolving on us necessary for the opening of the "International Exhibition." We hereby now formally appropriate them for their intended occupation; and we hold ourselves ready to make all further arrangements that may be needed for carrying into full and complete effect all the requirements of the acts of Congress relating to the Exhibition.

For a like purpose, we also appropriate the buildings belonging to the State of Pennsylvania and the City of Philadelphia, erected by us at their bidding to wit: Memorial Hall, Machinery Hall and Horticultural Hall. These and other substantial offerings stand as the evidence of their patriotic co-operation. To the United States of America, through Congress, we are indebted for the aid which crowned our success.

In addition to those to which I have just referred, there are other beautiful and convenient edifices, which have been erected by the representatives of foreign nations, by State authority, and by individuals, which are also devoted to the purposes of the Exhibition.

Ladies and gentlemen: If in the past we have met with disappointments, difficulties and trials, they have been overcome by a consciousness that no sacrifice can be too great which is made to honor the memories of those who brought our nation into being. This commemoration of the events of 1776 excites our present gratitude. The assemblage here to-day of so many foreign representatives uniting with us in this reverential tribute is our reward.

We congratulate you on the occurrence of this day. Many of the nations have gathered here in peaceful competition. Each may profit by the association. This Exhibition is but a school; the more thoroughly its lessons are learned, the greater will be the gain, and when it shall have closed, if by that study the nations engaged in it shall have learned respect for each other, then it may be hoped that veneration for Him who rules on high will become universal, and the angels' song once more be heard—

"Glory to God in the highest,
And on earth peace, good will towards men."

7. CANTATA, by **Sidney Lanier** of Georgia. MUSIC by **Dudley Buck** of Connecticut. Basso Solo by **Myron W. Whitney** of Boston.

From this hundred-terraced height
Sight more large with nobler light
Ranges down yon towering years:
Humbler smiles and lordlier tiers
Shine and fall, shine and fall,
While old voices rise and call
Yonder where the to-and-fro
Weltering of my Long-Ago
Moves about the moveless base
Far below my resting-place.

Mayflower, Mayflower, slowly hither flying,
Trembling Westward o'er yon balking sea,
Hearts within *Farewell dear England* sighing,
Winds without *But dear in vain* replying,
Gray-lipp'd waves about thee shouted, crying
No! It shall not be!

Jamestown, out of thee—
Plymouth, thee—thee, Albany—
Winter cries, *Ye freeze: away!*
Fever cries, *Ye burn: away!*
Hunger cries, *Ye starve: away!*
Vengeance cries, *Your graves shall stay!*

Then old Shapes and Masks of Things,
Framed like Faiths or clothed like Kings—
Ghosts of Goods once fleshed and fair—
Grown foul Bads in alien air—
War, and his most noisy lords,
Tongued with lithe and poisoned swords—

Error, Terror, Rage and Crime,
All in a windy night of time
Cried to me from land and sea,
No! Thou shalt not be!

Hark!
Huguenots whispering *yea* in the dark,
Puritans answering *yea* in the dark
Yea, like an arrow shot true to his mark,
Darts through the tyrannous heart of Denial.
Patience and Labor and solemn-souled Trial,
Foiled, still beginning,
Soiled, but not sinning,
Toil through the stertorous death of the Night,
Toil, when wild brother-wars new dark the Light,
Toil, and forgive, and kiss o'er, and replight.

Now Praise to God's oft-granted grace,
Now Praise to Man's undaunted face,
Despite the land, despite the sea,
I was: I am: and I shall be—
How long, Good Angel, O how long?
Sing me from Heaven a man's own song!

"Long as thine Art shall love true love,
Long as thy Science truth shall know,
Long as thine Eagle harms no Dove,
Long as thy Law by law shall grow,
Long as thy God is God above,
Thy brother every man below,
So long, dear land of all my love,
Thy name shall shine, thy fame shall glow!"

O Music, from this height of time my Word unfold:
In thy large signals all men's hearts Man's Heart behold:
Mid-heaven unroll thy chords as friendly flags unfurled,
And wave the world's best lover's welcome to the world.

8. PRESENTATION OF THE EXHIBITION TO THE PRESIDENT OF THE UNITED STATES, BY JOSEPH R. HAWLEY, President of the United States Centennial Commission.

MR. PRESIDENT:—Five years ago the President of the United States declared it fitting that "the completion of the first century of our national existence should be commemorated by an exhibition of the natural resources of the country, and their development, and of its progress in those arts which benefit mankind," and ordered that an exhibition of American and foreign arts, products, and manufactures should be held, under the auspices of the Government of the United States, in the city of Philadelphia, in the year eighteen hundred and seventy-six. To put into effect the several laws relating to the Exhibition, the United States Centennial Commission was constituted, composed of two commissioners from each State and territory, nominated by their respective Governors, and appointed by the President. The Congress also created our auxiliary and associate corporation, the Centennial Board of Finance, whose unexpectedly heavy burdens have been nobly borne. A remarkable and prolonged disturbance of the finances and industries of the country has greatly magnified the task; but we hope for a favorable judgment of the degree of success attained. July 4, 1873, this ground was dedicated to its present uses. Twenty-one months ago this Memorial Hall was begun. All the other one hundred and eighty buildings within the enclosure have been erected within twelve months. All the buildings embraced in the plans of the Commission itself are finished The demands of applicants exceeded the space, and strenous and continuous efforts have been made to get every exhibit ready in time.

By general consent the Exhibition is appropriately held in the City of Brotherly Love. Yonder, almost within your view, stands the venerated edifice wherein occurred the event this work is designed to commemorate, and the hall in which the first Continental Congress assembled. Within the present limits of this great park were the homes of eminent patriots of that era, where Washington and his associates received generous hospitality and able counsel. You have observed the surpassing beauty of the situation placed at our disposal. In harmony with all this fitness is the liberal support given the enterprise by the State, the city, and the people, individually.

In the name of the United States, you extended a respectful and cordial invitation to the governments of other nations to be represented and to participate in this Exhibition. You know the very acceptable terms in which they responded, from even the most distant regions. Their commissioners are here, and you will soon see with what energy and brilliancy they have entered upon this friendly competition in the arts of peace.

It has been the fervent hope of the Commission that, during this festival year, the people from all States and sections, of all creeds and churches, all parties and classes, burying all resentments, would come up together to this birthplace of our liberties, to study the evidence of our resources; to measure the progress of an hundred years; and to examine to our profit the wonderful products of other lands; but especially to join hands in perfect fraternity and promise the God of our fathers that the new century shall surpass the old in the true glories of civilization. And furthermore, that from the association here of welcome visitors from all nations, there may result not alone great benefits to invention, manufactures, agriculture, trade and commerce, but also stronger international friendships and more lasting peace.

Thus reporting to you, Mr. President, under the laws of the government and the usage of similar occasions, in the name of the United States Centennial Commission, I present to your view the International Exhibition of 1876.

9. ADDRESS by the PRESIDENT OF THE UNITED STATES, and Proclamation of the Opening of the International Exhibition of 1876:

MY COUNTRYMEN: It has been thought appropriate, upon this Centennial occasion, to bring together in Philadelphia, for popular inspection, specimens of our attainments in the industrial and fine arts, and in literature, science and philosophy, as well as in the great business of agriculture and of commerce.

That we may the more thoroughly appreciate the excellencies and deficiencies of our achievements, and also give emphatic expression to our earnest desire to cultivate the friendship of our fellow members of this great family of nations, the enlightened agricultural, commercial and manufacturing people of the world have been invited to send hither corresponding specimens of their skill to exhibit on equal terms in friendly competition with our own. To this invitation they have generously responded; for so doing we render them our hearty thanks.

The beauty and utility of the contributions will this day be submitted to your inspection by the Managers of this Exhibition. We are glad to know that a view of specimens of the skill of all nations will afford to you unalloyed pleasure, as well as yield to you a valuable practical knowledge of so many of the remarkable results of the wonderful skill existing in enlightened communities.

One hundred years ago our country was new and but partially settled. Our necessities have compelled us to chiefly expend our means and time in felling forests, subduing prairies, building dwellings, factories, ships, docks, warehouses, roads, canals, machinery, etc., etc. Most of our schools, churches, libraries and asylums have been established within an hundred years. Burthened by these great primal works of necessity, which could not be delayed, we yet have done what this Exhibition will show in the direction of rivaling older and more advanced nations in law, medicine and theology; in science, literature, philosophy and the fine arts. Whilst proud of what we have done, we regret that we have not done more. Our achievements have been great enough, however, to make it easy for our people to acknowledge superior merit wherever found.

And now, fellow-citizens, I hope a careful examination of what is about to be exhibited to you will not only inspire you with a profound respect for the skill and taste of our friends from other nations, but also satisfy you with the attainments made by our own people during the past one hundred years. I invoke your generous co-operation with the worthy commissioners to secure a brilliant success to this International Exhibition, and to make the stay of our foreign visitors—to whom we extend a hearty welcome—both profitable and pleasant to them.

I declare the International Exhibition now open.

THE EXHIBITORS.

MAIN BUILDING AND ANNEXES.

United States	3,441	Orange Free State	1
Great Britian	549	China	81
Victoria	502	Japan	284
New South Wales	188	Denmark	70
South Australia	103	Turkey	1,606
Queensland	131	Portugal	560
New Zealand	92	Tunis	18
Jamaica	36	Hawaii	80
Bermudas	32	Egypt	46
Tasmania	99	Spain	1,007
Bahamas	37	Russia	410
Trindad	29	Austria	347
British Guiana	20	Germany	669
Gold Coast	27	France	721
Cape of Good Hope	104	Switzerland	387
Straits Settlement	6	Belgium	283
Mouritius, &c	40	Brazil	324
India	1	Netherlands	137
Canada	560	Mexico	287
Argentine Republic	369		
Chili	87		14,420
Peru	80		

MACHINERY HALL

United States	1,860	Sweden	20
Great Britain	140	Austria	8
Brazil	57	Switzerland	1
France	50	Italy	1
German Empire	45		
Canada	42		2,284
Belgium	35		
Russia	25		

ART GALLERY AND ANNEXES.

United States	787
Great Britain	247
France	269
Germany	158
Austria	113
Spain	132
Italy	166
Belgium	145
Netherlands	118
Denmark	8
Sweden	82
Norway	39
Russia	59
Canada	45
Mexico	49
Brazil	24
Argentine Republic	19
Australia	2
Japan	2
Uruguay	8
	2,468

AGRICULTURAL HALL AND ANNEXES.

United States	2,059
Great Britain	83
New Zealand	13
New South Wales	9
South Australia	4
Cape of Good Hope	12
Jamaica	1
Canada	168
France	265
Germany	148
Austria	77
Netherlands	69
Sweden	67
Norway	68
Italy	268
Brazil	563
Argentine Republic	617
Portugal	1,887
Russia	260
Japan	72
Phillipine Islands	175
	6,885

HORTICULTURAL DEPARTMENT.

United States	153
Great Britain	6
New Zealand	1
Jamaica	1
France	6
Germany	1
Austria	1
Netherlands	7
Luxembourg	1
Phillipine Islands	1
Spain	2
St. Domingo	1
	281

THE SYSTEM OF AWARDS.

First.—Awards shall be based upon written reports attested by the signatures of their authors.

Second.—The judges will be selected for their known qualifications and character, and will be experts in departments to which they will be respectively assigned. The foreign members of this body will be appointed by the Commission of each country and in conformity with the distribution and allotment to each, which will be hereafter announced. The judges from the United States will be appointed by the Centennial Commission.

Third.—The sum of six hundred dollars will be paid to each of the United States judges for personal expenses.

Fourth.—Reports and awards shall be based upon inherent and comparative merit. The elements of merit shall be held to include considerations relating to originality, invention, discovery, utility, quality, skill, workmanship, fitness for the purposes intended, adaptation to public wants, economy and cost.

Fifth.—Each report will be delivered to the Centennial Commission as soon as completed, for final award and publication.

Sixth.—Awards will be finally decreed by the United States Centennial Commission, in compliance with the act of Congress, and will consist of a diploma, with a uniform bronze medal, and a special report of the judges on the subject of the award.

Seventh.—Each exhibitor will have the right to produce and publish the report awarded to him, but the U. S. Centennial Commission reserves the right to publish and dispose of all reports in the manner it thinks best for public information, and also to embody and distribute the reports as records of the exhibition.

A. T. GOSHORN, *Director General.*
J. R. HAWLEY, *President.*
JOHN L. CAMPBELL, *Secretar .*

PHILADELPHIA, *April* 8, 1876.

Under the above order the following gentlemen were selected as judges:

JUDGES.

I —MINERALS, MINING, METALLURGY AND MACHINERY.

American—Alexander L. Holley, 56 Broadway, New York; Prof. T. Sterry Hunt, LL.D., F.R.S., St. James' Hotel, Boston, Mass.; Prof. J. M. Safford, Tennessee; S. B. Axtell, Santa Fé, New Mexico; John Fritz, Bethlehem, Pa.; Austin Savage, Boise City, Idaho; W. S. Keyes, M.E., Eureka, Nevada; Prof. Frederick Prime, Jr., Secretary, Easton, Pa.; Matthew Addy, Cincinnati, Ohio; Prof. G. C. Broadhead, Pleasant Hill, Missouri.

Foreign—Mr. Isaac Lowthian Bell, F.R.S., M.P., C.E., President, Great Britain; Mr. Ernst. F. Althans, Germany; Mr. L. Simonin, France; Mr. F. Valton, France; Richard Akerman, Sweden; Mr. Achille Jottrand, Belgium; Mr. L. Nicolsky, Russia; Mr. Nicolas Jossa, Russia; Prof. Dr. Th. Kjerulf, Norway; Don Dan'l de Cortazar, Spain; Mariano Barrena, Mexico.

II.—POTTERY, GLASS, ARTIFICIAL STONE, ETC.

American—Gen. Q. A. Gillmore, U. S. A., Care D. Van Nostrand, New York; Arthur Beckwith, Secretary, 134 Fifth Avenue, New York; Prof. E. T. Cox, Indianapolis, Indiana; Gen. Hector Tyndale, Philadelphia, Pa.; Henry Wurtz, Hoboken, New Jersey.

Foreign—R. H. Soden Smith, M.A., President, Great Britain; Dr. G. Seelhorst, Germany; Ch. de Bussy, France; Adolf E. Nordenskiold, Sweden; M. K. Notoms, Japan.

III.—CHEMISTRY AND PHARMACY, WITH THE APPARATUS.

American—Prof. C. A. Joy, Columbia College, N. Y.; Prof. F. A. Genth, University of Pennsylvania, Philadelphia, Pa.; Prof. J. Lawrence Smith, President, Louisville, Ky.; Prof. C. F. Chandler, Columbia College, N. Y.; Prof. J. W. Mallet, University of Virginia, Charlottesville, Va.

Foreign—Dr. William Odling, F.R.S., Secretary, Great Britain; Dr. Rudolph von Wagner, Germany; S. J. F. Kuhlman, (fils,) France; M. Prosper DeWilde, Belgium; Emanuel Paterno, Italy.

IV.—ANIMAL AND VEGETABLE PRODUCTS—MACHINERY.

American—Prof. W. C. Kerr, Raleigh, N. C.; L. B. Arnold, Rochester, N. Y.; Col. J. F. Tobias, 1705 Locust street, Philadelphia, Pa.; Col. John Bradford, Tallahasse, Florida; Guido Marx, Toledo, Ohio; Ryland T. Brown, President, Indianapolis, Ind.; W. S. Greene, Secretary, Milford, Wis.

Foreign—Julius Wegeler, Germany; Mr. Edouard Martell, France; Don E. Loring, Spain; Dr. Nicolau J. Moreira, Brazil; M. Jayme Batalha Reis, Portugal; Mr. Ekeda Kenzo, Japan; E. Oldendorff, Argentine Confed.; E. von Baumhauer, Nethlands; H. G. Joly, M.P., Canada; G. F. Secchi de Casali, Italy; Prof. Th. Segelcke, Denmark; Rustern Effendi, Turkey.

V.—FISH AND FISH PRODUCTS—APPARATUS OF FISHING.

American—Prof. S. F. Baird, Smithsonian Institution, Washington; T. B. Ferguson, Baltimore, Md.

Foreign—Joakim Andersen, Norway.

VI.—TIMBER, WORKED LUMBER, PARTS OF BUILDINGS.

American—Prof. Wm. H. Brewer, President, New Haven, Conn.; J. M. Bennett, Weston, Lewis county, W. Va.; Prof. J. S. Newberry, Cleveland, Ohio, or Columbia College, N. Y.

Foreign—Jno. R. West, Secretary, Chili; M. Rodrigues de Vasconcellos, Portugal; Hon. J. Skead, Canada; Dr. José de Saldanha, Brazil.

VII.—FURNITURE, UPHOLSTERY, WOODEN WARE.

American—Addison Boyden, President, Boston, Mass.; Chauncey Wiltse, Omaha, Neb.; Robert Mitchell, Cincinnati, Ohio.

Foreign—Le Marquis de Rochambeau, France; Mr. Theo. Snyers, Secretary, Belgium; Francis Thonet, Austria.

VIII.—COTTON, LINEN AND OTHER FABRICS, ETC

American—Edward Atkinson, Secretary, Boston, Mass.; Hugh Waddell, Savannah, Ga.; Colonel Ed. Richardson, Jackson, Miss.; A. D. Lockwood, Providence, R. I.; Chas. H. Wolff, Cincinnati, Ohio; Colonel Samuel Webber, C. E., Manchester, N. H.; George O. Baker, Selma, Ala.

Foreign—Mr. Isaac Watts, President, Great Britain; Mr. W. W. Hulse, C. E., Great Britain; Don Alvaro de la Gandara, Spain; Major A. Goldy, Switzerland; Prof. Gustav Herrmann, Germany; Prof. Guiseppe Dassi, Italy.

IX.—WOOL AND SILK FABRICS—MACHINERY.

American—John L. Hayes, Cambridge, Mass.; Elliot C. Cowdin, President, New York; Charles Le Boutillier, Philadelphia, Pa.; Charles J. Ellis, 714 Market street, Philadelphia, Pa.; J. D. Lang, Vassalboro', Maine.

Foreign—Consul Gustav Gebhard, Secretary, Germany; Theodore Bochner, Jr., Austria; Mr. Henry Mitchell, Great Britain; Dr. Max. Weigert, Germany; Louis Chatel, France; Carl Arnberg, Sweden; Mr. Hayami Kenzo, Japan; Mr. John G. Neeser, Switzerland; August Behmer, Egypt; Albert Daninos, Turkey.

X.—CLOTHING, FURS, INDIA RUBBER GOODS, ETC.

American—Prof. W. H. Chandler, Ph.D., F. C. S., Secretary, Lehigh University, South Bethlehem, Pa.; Wm. O. Linthicum, 174 Fifth Avenue, New York City; Benj. F. Britton, New York City; Dr. George Hewston, President, Folsom street, San Francisco, Cal.; Prof. E. N. Horsford, Cambridge, Mass.

Foreign—Ch. J. Dietz-Monnin, France; Mr. Modest Kittary, Russia; Mr. Edward Kanitz, Austria; Mr. M. P. Empey, Canada.

XI.—JEWELRY, WATCHES, SILVERWARE, BRONZES, ETC.

American—Martin P. Kennard, President, Boston, Mass.; Peter Gottesleben, Secretary, Denver, Col.

Foreign—G. H. Heap, Tunis; Roulleaux Dugage, France.

XII.—LEATHER AND MANUFACTURES OF LEATHER, ETC.

American—Gov. F. H. Pierpont, President, Fairmount, Marion Co., W. Va.; John Cumming, Secretary, Boston, Mass.; Thomas Miles, Philadelphia, Pa.; J. P. Postles, Wilmington, Del.

XIII—PAPER, STATIONERY, PRINTING AND BOOK-MAKING.

American—James M. Willcox, Ph.D., President, Glenn Mills, Pa., 1722 Spruce street, Philadelphia; C. O. Chapin, Springfield, Mass.; Wm. Faxon, Hartford, Conn.; Edward Conley, Cincinnati, Ohio; H. T. Brian, Secretary, Government Printing Office, Washington.

Foreign—Sir Sydney H. Waterlow, Bart., M. P., Great Britain; G. W. Seitz, Germany.

XIV.—APPARATUS OF HEATING, LIGHTING, ETC.

American—C. C. Cox, M. D., LL.D., President, Washington, D. C.; Azel Ames, Jr., M. D., Secretary, Wakefield, Mass.

XV.—BUILDERS' HARDWARE, TOOLS, CUTLERY, ETC.

American—Chas. Staples, Jr., Portland, Me.; Daniel Steinmetz, President, Philadelphia, Pa.; George L. Reed, Clearfield, Pa.; General John D. Imboden, Richmond, Va.

Foreign—Hon. J. Bain, Lord Provost of Glasgow, Great Britain; Mr. D. MacHardy, Great Britain; Julius Diefenbach, Secretary, Germany.

XVI.—MILITARY AND SPORTING ARMS, WEAPONS, &C.

American.—Col. S. C. Lyford, U. S. A., Chairman Government Board, &c.; Gen. H. L. Abbot, U. S. A., President, Willetts' Point, N. Y.; Geo. A. Hamilton, St. Paul, Minn.

Foreign.—Major Wm. H. Noble, R. A., Secretary, Great Britain; Capt. Comm't of Artillerie, Alphonse Lesne, Belgium; Capt. P. de Saldanha da Gama, Brazil.

XVII.—CARRIAGES, VEHICLES, AND ACCESSORIES.

American.—Thos. Goddard, Boston, Mass., 134 State street; B. F. Morse, Augusta, Maine.

Foreign.—M. Guiet, France; Wm. Dufus, Canada.

XVIII.—RAILWAY PLANT, ROLLING STOCK, ENGINES, &C.

American.—Col. Robt. E. Ricker, Elizabeth, N. J.; Gen. T. A. Morris, Indianapolis, Ind.; Felician Slataper, Secretary, Pittsburg, Pa.;

Foreign.—Capt. Douglas Galton, R. E., C. B., F. R. S., President, Great Britain Mr. Ernest Pontzen, Austria; Mr. E. Schaar, Belgium.

XIX.—VESSELS AND APPARATUS OF TRANSPORTATION.

American.—Isaac Newton, New York; J. W. Griffiths, Portsmouth, New Hampshire; H. C. Goodspeed, Salt Lake City, Utah.

Foreign.—Col. F. H. Rich, R. E., Great Britain.

XX.—MOTORS, HYDRAULIC AND PNEUMATIC APPARATUS.

American.—C. T. Porter, Newark, N. J.; Jos. Belknap, New York; James Moore, Philadelphia, Pa.; Horatio Allen, President, South Orange, "Homewood," N. J.; Chas. E. Emery, 7 Warren street, New York.

Foreign.—Mr. W. H. Barlow, C. E., Great Britain; Prof. Francis Reuleaux, Germany; Nicholas Petroff, Russia; Emil Brugsch, Secretary, Egypt.

XXI.—MACHINE TOOLS FOR WOOD, METAL AND STONE.

American.—Irving M. Scott, Union Iron Works, San Francisco, Cal.; George H. Blelock, Springfield, Mass; W. F. Durfee, Wisconsin, at 56 Broadway, N. Y.; Prof. John A. Anderson, President Kansas State Agricultural College, Manhattan, Kansas;

Foreign.—Mr. John Anderson, LL. D., C. E., President, Great Britain; M. le Commandant F. Perrier, France; Mr. C. A. Angstrom, Sweden; Mr. Auguste Gobert, fils, Secretary, Belgium; Mr. Felix Reifer, Austria.

XXII.—MACHINES AND APPARATUS USED IN SEWING, &C.

American.—Geo. W. Gregory, Boston, Mass.; Edward H. Knight, President, Patent Office, Washington, D. C.; L. D. F. Poore, Springfield, Dakota.

Foreign.—Mr. Fred. A. Paget, C. E., Secretary, Great Britain.

XXIII.—AGRICULTURAL MACHINES, IMPLEMENTS OF AGRICULTURE, &C.

American.—Hon. John P. Reynolds, Chicago, Ill.; James S. Grinnell, Secretary, Washington, D. C.; James Bruce, Corvallas, Oregon.

Foreign.—Mr. John Coleman, President, Great Britain; Don Fermin Rosillo, Spain; Pedro Paes Leme, Brazil; M. Manuel Irarrazaval, Chili.

XXIV.—INSTRUMENTS OF MEDICINE, SURGERY, &C.

American.—C. B. White, M. D., New Orleans, La.; J. H. Thompson, A. M., M. D., Secretary, Washington, D. C.

Foreign.—W. A. Roth, M. D., President, Germany; Dr. Ernst Fleischi, Austria.

XXV.—INSTRUMENTS OF PRECISION, RESEARCH, ETC.

American—Prof. Joseph Henry, LL.D., Secretary of Smithsonian Institution, Washington, D. C.; Prof. F. A. P. Barnard, S.T.D., LL.D., Columbia College, N. Y., Prof. J. E. Hilgard, Washington, D. C.; Prof. J. C. Watson, Secretary, Ann Harbor, Mich.; General Henry K. Oliver, Salem, Mass.; Geo. F. Bristow, New York.

Foreign—Sir William Thomson, LL.D., D.C.L., F.R.S., President, Great Britain; Jul. Schiedmayer, Germany; E. Levasseur, France; P. F. Kupka, Austria; Edw. Favre Perret, Switzerland.

XXVI.—ARCHITECTURE AND ENGINEERING.

American—James B. Eads, C.E., South Pass Jetty Works, 122 Common street, New Orleans, La.; General Wm. B. Franklin, President, Hartford, Conn.; Richard M. Hunt, 49 West 35th street, New York; Colonel George E. Waring, Jr., Secretary, Newport, R. I.

Foreign—Sir John Hawkshaw, C.E., F.R.S., Great Britain; M. Edouard Lavoinne, France; J. M. da Silva Continho, Brazil; T. G. W. Fynje, Netherlands; Lourenco Maheiro, M.E., Portugal.

XXVII.—PLASTIC AND GRAPHIC ART.

American—Frank Hill Smith, Boston, Mass.; James L. Claghorn, President, Philadelphia, Pa.; Prof. J. F. Weir, New Haven, Conn.; Brantz Mayer, Baltimore, Md.; Donald G. Mitchell, New Haven, Conn.; Geo. Ward Nichols, Secretary, Cincinnati, Ohio; Prof. Henry Draper, New York University, New York City.

Foreign—Mr. Charles West Cope, R.A., Great Britain; Mr. Peter Graham, Great Britain; Carl Schlesinger, Germany; Dr. H. W. Vogel, Germany; Mr. Emile Saintain, France; Fritz L. von Dardel, Sweden; P. N. Arbo, Norway; Don N. L. Valdemoro, Spain; Mr. A. Tantardini, Italy; Guglielmo de Sanctis, Italy; Mr. Carl Costenoble, Austria; Prof. J. V. Dahlerup, Denmark; E. van Heemskerck van Beest, Netherlands.

XXVIII.—EDUCATION AND SCIENCE.

American—Hon. Andrew D. White, LL.D., President of Cornell University, Ithaca N. Y.; D. C. Gilman, LL.D., President of Johns Hopkins University, Baltimore, Md.; Hon. J. M. Gregory, LL.D., Champaign, Ill.; Prof. J. W. Hoyt, LL.D., Secretary, Madison, Wis.

Foreign—Sir Charles Reed, President, Great Britain; Mr. René Fouret, France; Col. John Marin, Spain; Prof. Dr. Otto Martin Torell, Sweden.

GROUP XXIX—HORTICULTURE.

Prof. George Thurber, New York, N. Y.; William Saunders, Washington, D, C.; W. S. Breckenridge, Govanstown, Md.; Francis Pentlond, Cincinnati, Ohio.

GROUP XXX—HORSES, MULES AND ASSES.

John R. Viloy, Lexington, Ky.; J. W. Welder, New York, N. Y.; Basil Duke, St. Louis, Mo.; Col. E. S. Stowell, Cornwall, Vt.; Thaddeus Holt, Macon, Geo.; Milo Smith, Clinton, Iowa; Gen. Thos. G. Williams, Austin, Texas; S. P. Brown, Washington, D. C.; Archibald MacAllister, Springfield Furnace, Pa.; S. H. Teukesbury, Portland, Me.; George Murray, Racine, Wis.; Ira Morgan, Canada; T. Parrington, Great Britain.

GROUP XXXI—NEAT CATTLE.

T. C. Jones, Olanore, Ohio; Warren Percival, Wellsboro', Me.; M. Wilkins, Harrisburg, Oregon; Colin Cameron, Lancaster, Pa.; H. C. Meredith, Cambridge City. Ind.; Athbel Smith, Md., Texas; William Birnie, Springfield, Mass.; J. Milton Mackie, Great Barrington, Mass.; Frank T. Anderson, Rockbriar, Va.; S. T. Lynch. Los Angelos, Cal.; Geo. E. Waring, Newport, R. I.; L. H. Waddell, Philadelphia, Pa.; Edward Howe, James Moore, Hamilton, Canada; M. P. Duckham, London, England.

GROUP XXXII—SHEEP.

Geo. Campbell, W. Westminster, Vt.; P. H. Lanner, Salt Lake City, Utah; J. S. Moynard, Weld county, Col.; Moses Stocking, Wahoo, Neb.; O. H. Buchener, Mt. Pleasant, Iowa; Owen Richard, Great Britain; Alexander Barrie, Canada.

GROUP XXXIII—SWINE.

J. M. Washburne, Sioux Falls, Dakota; James Middleton, Minnesota; J. W. Baker, Great Britain; W. Rhodes.

GROUP XXXIV—DOGS.

John E. Long, Detroit, Michigan; Col. F. G. Skinner, New York, N. Y.; C. H. Waddell, Philadelphia, Pa.; John Swann, Baltimore, Md.; G. O. Diolet, Montreal, Canada.

GROUP XXXV—POULTRY.

Z. C. Sure, Iowa City, Iowa; Mark Pitman, Beverly, Mass.; A. M. Halstead, Rye, N. Y.; Charles Crosby, Danbury, Conn.; W. F. Rogers, Doylestown, Pa.; John Aldrus, Ontario, Canada.

GROUP XXXVI—POMOLOGY.

Geo. L. Davenport, Davenport, Iowa; Parker Earle, Cobden, Ill.; S. T. Suit, Silver Hill, Md.; J. B. Yellowby, Canton, Miss.; M. Martin, Chattahoochie, Fla.; T. T. Lyon, South Haven, Mich.; Josiah Hooper, West Chester, Pa.; W. L. Scheffer, Phila, Pa.; Wm. Parry, Phila, Pa.; A. W. Hamson, Phila, Pa.; Thos. Meehan, Phila, Pa.; Edward Satterthwaite, Jenkintown, Pa.; Fred Foster, Muscatine, Iowa.

GROUP XXXVII—ON STATE AND COLLECTIVE EXHIBITS.

C. J. Dannfeldt, Sweden ; E. Olldendorft, Argentine Republic ; T. W. Talmadge ; J. A Johnson ; T. E. Sickles.

GROUP XXXVIII—ON APPEALS.

John Fritz, Bethlehem, Pa. ; Chas. Stoples, Portland, Me. ; Prof. S. F. Baird, Washington, D C. ; B. F. Britton, New York, N. Y. ; Prof. H. H. Smith, Penn Univ. Phila, Pa. ; W. Wilkins, Oregon ; H. K. Oliver, Salem, Mass. ; Coleman Sellers, Delaware ; James T. Claghorn, Phila, Pa. ; Edward Conley, Cincinnati, Ohio.

GROUP XXXIX—BUTTER AND CHEESE.

F. W. Fairman ; George Addy.

CEREMONY OF THE DISTRIBUTION OF AWARDS

To Exhibitors in the International Exhibition, 1876, *Judges' Hall, Wednesday, September* 27.

PROGRAMME.

MARCH—"Centennial" .... By the Orchestra.
CARL HEINEMAN, *Conductor.*
Entrance and Reception of Guests.
PRAYER .... Rev. Henry A. Boardman, D. D., of Philadelphia.
MUSIC .... The Temple Quartette of Boston.
Messrs. FITZ, FESSENDEN, COOK and RYDER.
ADDRESS .... U. S. Commissioner Daniel J. Morrell, Presiding.
MUSIC—National Airs. .... Carl Heineman, Conductor.
ADDRESS .... U. S. Commissioner Alfred T. Goshorn.
Director-General International Exhibition, 1876.
MUSIC .... The Temple Quartette.
PRESENTATION OF AWARDS .... By Joseph R. Hawley.
President United States Centennial Commission, to Commissioners from Foreign Countries, and to Director-General Alfred T. Goshorn, for the Exhibitors from the United States.
MUSIC .... The Temple Quartette
PROMENADE .... First Brigade Band.
U. S. Commissioner DANIEL J. MORRELL, *Presiding.*
U. S. Commissioner JOHN M'NEIL, *Master of Ceremonies.*

COMMITTEE OF ARRANGEMENTS.

U. S. Commissioner THOMAS DONALDSON, CHAIRMAN.
U. S. Commissioner FRANKLIN C. JOHNSON.
U. S. Commissioner J. F. BERNARD.

DISTRIBUTION OF AWARDS.

The announcement of the awards to the exhibitors of the International Exhibition of 1876 was made at the Judges' Hall, in the Exhibition grounds, on the evening of Wednesday, September 27, 1876.

Before 8 P. M. there had assembled in the Judges' Hall the Governor and State officers of Pennsylvania, with the Governors of other States and Territories; the mayor and other officers of the city of Philadelphia; the chiefs of bureaus in the International Exhibition, with their assistants; the members of the boards of Centennial managers representing the several States; and other persons officially connected with the Exhibition, many of them being accompanied by ladies.

At 8 o'clock the presiding officer of the ceremony, Mr. Daniel J. Morrell, chairman of the executive committee of the Centennial Commission, was escorted to the chair. There were then introduced the guests and officials of the ceremony: the members of the United States Centennial Commission; the Centennial Board of Finance; the United States Government Board, led by Col. S. C. Lyford, U. S. A.; the International Board of Judges, led by Gen. Francis A. Walker, Chief of the Bureau of Awards; the foreign commissioners, escorted by Mr. Alfred T. Goshorn, Director General of the International Exhibition; and representatives of the national government and the diplomatic corps, accompanied by the Hon. Joseph R. Hawley, President of the Centennial Commission, and Mr. John Welch, President of the Centennial Board of Finance.

After an invocation by the Rev. Henry A. Boardman, D. D., of Philadelphia, the order of ceremonies, as announced in the programme, was proceeded with.

MR. MORRELL'S ADDRESS.

LADIES AND GENTLEMEN:—The acts of Congress which provide for celebrating the one hundredth anniversary of American Independence, by holding an International Exhibition in the city of Philadelphia, in the year 1876, have made it the duty of the United States Centennial Commission, created by these acts, to award all premiums to exhibitors.

The judges appointed by foreign governments and by this Commission have closed their labors; their reports have been examined by the Chief of the Bureau of Awards and by the Commission, and, in so far as they have been found to be in conformity with the rules, and in proper form, they are approved, and you are invited to witness their publication as awards, which will hereafter be completed by the delivery of diplomas and medals.

In accordance with the rules of the Commission, these reports are based upon the inherent and comparative merit of the things exhibited, involving considerations of originality, invention, discovery, utility, quality, skill, workmanship, fitness for the purpose intended, adaptation to public wants, economy and cost; and they are attested by the signatures of their authors.

Those who have won prizes in this contest, open to the world, are congratulated upon receiving, in these reports, a fitting testimonial of excellence; yet those who have striven unsuccessfully will not be without their reward. While some individual exhibitors may have felt and manifested disappointment and jealousy, the competing countries have shown the most friendly and generous rivalry; in the school of the Exhibition their representatives have been quick to recognize their own defects and the merits of others, and have learned its best lesson, which may be tersely embodied in the maxim of the Grecian sage: "Know thyself."

The awards here made recognize the achievements of labor in overcoming the resistance which nature everywhere opposes to the infinite wants of man, and will encourage it to further efforts in extending the kingdom of use. They testify to a universal acknowledgment of industry as the strength of nations, and will inspire in all countries a higher regard for the laborer, and a greater pride in the perfection of his work.

It is the prayer of this Commission that the International Industrial Exhibition, which celebrates the hundredth anniversary of American Nationality, may mark the beginning of a new era of peace on earth, in which the nations, while communicating knowledge freely, will intelligently foster the labor of their people, and diligently strive to excel each other in all good work.

By the authority of the Government of the United States of America, as expressed in the laws of the National Congress, the President of this Commission will deliver the awards to the Commissioners of foreign nations represented in the Exhibition, and to the Director-General for distribution to the exhibitors of the United States.

MR. GOSHORN'S ADDRESS

MR. PRESIDENT AND GENTLEMEN :—The people of the United States of America are celebrating this year an event that marks a century of national life. It is an epoch in the history of the country, around which clusters the retrospect of years of anxiety and uncertainty, but of great energy and patriotism displayed in the ever-increasing unity and strength of the Federal Government. The growth of the political institutions under which the people have prospered, and the position the government has attained in the estimation of the world, are subjects of sincere congratulation. Whatever have been the errors of the last hundred years, they have been more than counterpoised by the successes; and there remain to us the net gain of a continent newly populated, consolidated political institutions, great industries and great material wealth developed, and with them a steady progress in the education of the masses and improvement in the social and moral condition of the people.

It seems appropriate and in every way becoming a youthful nation, so largely indebted in the past and dependent in the future on its great natural resources and the industry of its people, to commemorate the close of its first century and opening of the new one by inviting friendly nations to bring together for comparison and study their most advanced products. The courteous and flattering replies and valuable collections of products, in response to this national invitation, which have contributed so largely to this grand Exhibition, could not fail to awaken in us emotions of pride and gratitude.

This Exhibition is not a mere competition of rival manufactures and tradesmen. It brings together nationalities and leads to extended relations—promotes the acquisition and diffusion of a better knowledge of natural resources and products, and of national methods and industries. It creates and enlarges mutual respect and esteem, softens prejudices, and contributes to the preservation of harmony and peace—the noblest aim of civilization. The benefits of this assembling of the representatives of every civilized country with their products will be better understood and more fully appreciated after the Exhibition itself has passed away.

We are in the presence of the productions of science, art, invention, skill, and labor, fitted to improve the material and moral condition of man. We are at the same time in the presence of higher influences. The united attention and thought of many leading minds of the civilized world for the time being centre here, and by their representatives preside over this institution. Opinions of many and diverse minds, thus in contact, become by attrition and discussion more developed and perfected in themselves, and in turn flow back through various channels to reanimate and quicken their origin. We learn here what science and art have done for the comfort and elevation of man, and are reminded that the discoveries and inventions during the era which this Exhibition commemorates are the most remarkable and useful recorded in history.

I have no occasion to speak in great detail of the utility of Exhibitions. Nothing less than a lively and universal sense of their international and commercial benefits, and of their political, social, and educational effects, can account for the spontaneous co-operation of the active and leading minds of the world, and for the great and willing expenditures of time and money which they require. But I may be permitted to express my feelings in relation to another subject of vital importance to the success of this Exhibition. I allude to the National Commissioners appointed by the participating governments to conduct their respective departments and to co-operate with the Centennial Commission.

No feature of this enterprise has produced a more profound impression than the individual character and qualifications of the gentlemen selected for these Commissions, who are intrusted with most delicate and difficult duties. In addition to the required knowledge and experience, they have displayed calm consideration and forbearance, vigilant attention, and the most friendly and lively zeal for the success of the work.

It is therefore, gentlemen of the Foreign Commissions, that I seize this opportunity for my associates and myself, and on behalf of the exhibitors from the United States, to express to you, with the warmest feelings, the high sense we entertain of your important services and the large degree in which we are indebted to you for the measure of success which has crowned our efforts.

With equal earnestness and sincerity and pleasure I refer to the eminent body of men, both foreign and American, combining among them superior attainments in every department of human knowledge, selected to examine and express their opinions upon the qualities and merits of the products and subjects forming this Exhibition.

The task imposed on them was in some of its features new and untried. They were desired to express opinions individually and in writing upon the qualities and merits of individual products, and to affirm their opinions by their respective signatures. Most obviously this was asking the performance of a task at once difficult and delicate, and the assumption of great moral responsibility.

The good will, earnestness, and zeal with which they accepted this onerous charge and entered upon the work gave assurances to the Centennial Commission from the outset that have been to them a source of gratification and of confidence. Their work is now completed and will soon be given to the public, which is in the end the final arbiter and ultimate judge. It is not competent for me to anticipate that verdict, but I may allude to some of the elements on which it must of necessity be founded

It has been the duty of the Centennial Commission to examine, appreciate, and confirm in legal form twelve thousand or more of the recommendations of the Judges for Awards. In the progress of this labor the Commission have been impressed with the spirit of impartiality, fairness, and earnestness which pervades the work. They have been equally impressed with the evidences of trained skill and acute discrimination, and with the manifestations of special and general knowledge throughout. Surely it cannot fail that the people and nations represented here will in due time acquire from the useful and reliable information conveyed by the reports of the Judges a better and fuller knowledge of their own products and of the products of each other.

In the full confidence that the wishes and aims of the Centennial Commission in adopting this method of awards will be thus happily realized and appreciated both by exhibitors and the public, I have now the honor to express to you, gentlemen of the Board of Judges, both foreign and American, on behalf of the Centennial Commission, our thanks for the signal aid and great benefits in this department which you have conferred on the exhibitors.

And now, gentlemen, in a few weeks the object for which we came here will be accomplished. The Exhibition, which has been the source of so much pleasure and instruction, and which has excited the admiration of millions of visitors, will soon pass to the records of history. The circumstances that suggested it were of a peculiar and interesting character. Connected with the centenary commemoration of one of the most important political events in the history of the world, and from its inception having been free from merely commercial or mercenary motives, it was organized and has been conducted with the single view of erecting here a monument dedicated to the fruits of peace that will be remembered for all time with pride and pleasure. Inaugurated in a spirit of fraternity and good will, it was intended to afford to the people of this and all other countries an opportunity to see and study the elements that have conduced to the national welfare. We acknowledge our indebtedness to the exhibitors from foreign countries and to the exhibitors from the United States, who have co-operated with zeal and most faithfully to render the Exhibition successful in all of its departments. The work has been great, the difficulties many; but we trust the future will bring returns of a fruitful harvest.

GENERAL HAWLEY'S ADDRESS.

GENTLEMEN:—We have reached another interesting step in the progress of the International Exhibition of 1876. The importance of the work which culminates this evening has been felt by the Commission from the beginning. It has never been thought possible to devise or carry out a system of awards that would render absolute justice or obviate criticism, but it was believed that we could, by the plan with which you are familiar, get nearer that result than did our predecessors in other exhibitions. We departed from the usual system of international juries, and called to our assistance one hundred and twenty-five judges from the United States and an equal number from foreign nations, all selected for their known character and qualifications. Our method also dispensed with graduated medals. It required written reports recommending awards based upon merit, the elements of merit, in the language of the Commission, including "considerations relating to originality, invention, discovery, utility, quality, skill, workmanship, fitness for the purpose intended, adaptation to public wants, economy and cost." The articles exhibited were classified in twenty-eight groups, and to each of these groups a competent number of judges, foreign and American, was assigned. They entered upon their duties May 24. Each group chose a president and secretary, and called to its aid such reporters and experts as were needed. The rules required that the report upon each article or subject should be signed by some one judge and countersigned by at least a majority of his associates in that group. No limitation has been imposed upon the number of awards. It is apparent that of twenty articles submitted each might be worthy of honor for peculiar merit, or, on the other hand, it might happen that none would deserve special mention. The Chief of the Bureau of Awards, General Francis A. Walker, represented the Commission in its relations with the Judges, interpreting and applying the rules, and conveying the decisions of the Commission upon questions that arose from time to time. He classified the reports and prepared them for consideration by the Commission. That body has read every one of the reports, either in committee of the whole or in large subdivisions thereof. The task is not quite complete. A few reports are not ready for our examination. Final action upon others is delayed by reason of such oversights, alleged violations of the rules, duplications, overlappings, or technical errors, as may be expected in so large a mass of work by two hundred and fifty gentlemen, working in twenty-eight groups. The Commission has formally approved eleven thousand reports and awarded thereon the uniform medal and diploma. The lists of awards that we present this evening are classified by nationalities. The lists given to the press are arranged under their several groups. The preparation of diplomas, medals, and certified copies of the full reports in each case must necessarily be a work of more time. It was deemed just to the exhibitors to announce the principal facts as speedily as possible.

Among the many to whom we feel personally grateful stand prominently the tens of thousands of exhibitors. While commercial and purely material motives and considerations were presented in order to induce their participation, it is quite evident that a large part are here on this peculiar occasion, not alone from the United States, but from many nations, chiefly that they may testify their good will in this our festival year of the century. And there are many purely governmental exhibits not subject to competitive examination that will nevertheless receive the highest of awards—the continuing gratitude of the whole American people. The special manifestations of friendly interest and cordial good will presented by many sovereigns can never be forgotten, and they will do much to perpetuate international friend ships.

The Commissioners take this opportunity to express their very great pleasure over the happy relations between us and all the gentlemen of the foreign Commissions. It cannot be that anything yet to happen will disturb them. Should Heaven continue to smile upon this enterprise we shall all have great reason to thank Almighty God for this opportunity to make common property of the latest developments for the good of mankind and strengthen the bonds of peace and friendship now happily subsisting between the United States and all the world.

Gentlemen, I have no order of precedence among you. If any are warmer friends than others, I trust they are those with whom we have sometimes quarreled. I proceed to deliver your several lists of awards in alphabetical order.

The President of the Centennial Commission then called by name the nations represented in the Exhibition. As each was named, the Director-General introduced to the President the Commissioner designated to receive the awards—as follows:

Argentine Republic	Mr. Ernesto Oldendorff.
Austria	Dr. Francis Migerka.
Africa—Orange Free State	Mr. Charles W. Riley.
Belgium	Mr. J. Gody.
Brazil	Mr. Fellipe Lopes Netto.
Chili	Mr Edward Shippen.
China	Mr. J. S. Hammond.
Denmark	Mr. Thomas Schmidt.
Egypt	Mr. E. Brugsch.
France	Captain Anfrye.
German Empire	Mr. Gustavus Remak.
Grand Duchy of Luxembourg	Mr. F. Berger.
Hawaiian Islands	Mr. H. R. Hitchcock.
Italy	Count B. Litta.
Japanese Empire	Lieut-Gen. Saigo Tsukumichi.

Mexico	Mr. Manuel M. de Zamacona.
Netherlands	Dr. E. H. von Baumhauer.
Norway	Mr. William C. Christophersen.
Portugal	H. E. the Baron de Sant' Anna.
Russia	H. E. Mr. Charles de Bielsky.
Spain	Colonel F. Lopez Fabra.
Sweden	Mr. C. Juhlin-Dannfelt.
Switzerland	Mr. Edward Guyer.
Tunis	Mr. G. H. Heap.
Turkey	H. E., G. D'Aristarchi Bey.
United Kingdom and Colonies	Colonel Herbert B. Sandford, R. A.
Bahamas, New Zealand, Tasmania,	Dr. Edward T. Webb.
Bermuda	Mr. A. A. Outerbridge.
British Guiana	Mr. A. A. Outerbridge.
Cape of Good Hope	Mr. H. Crawford Coates.
Canada	Hon. E. G. Penny.
Ceylon, India, Gold Coast, Mauritius, Trinidad	Colonel H. B. Sandford, R. A.
Jamacia	Mr. William Robert Thomson.
New South Wales	Mr. Augustus Morris.
Queensland	Mr. Angus Mackay.
South Australia	Mr. S. Davenport.
Victoria	Sir Redmond Barry.
Venezuela	Mr. Leon de la Cova.

The distribution of awards was concluded by the President's delivering to the Director-General the list of those for exhibitors from the United States. As the representatives of the different countries were presented to the President, they were greeted with enthusiastic applause, the audience rising and cheering repeatedly.

Vocal music by the Temple Quartette, followed by a promenade performed by the band of the First Pennsylvania Brigade, National Guards, ended the ceremony.

VISITORS.

Number of paid at 50 cents	7,250,620
Do at 25 cents	753,654
Number of free admissions	1,906,692
Total	9,910,966
Amount received for admissions	$3,813,724 49

TRANSPORTATION.

There has been no more important question in connection with the great Exhibitions of the world than that of transportation. It has in every instance been surrounded with difficulties; and both at Paris and Vienna those difficulties interfered materially with the success of the enterprise. In Philadelphia this subject was taken in hand at the earliest moment practicable, and the usual good judgment of those in power was evinced in the selection of Capt. Dolphus Torrey as Chief of the Bureau of Transportation. Capt. Torrey's large and varied experience in connection with the railroads of the country, and his administrative ability, insured every possible advantage being taken to secure rapidity, care and certainty, both in the delivery of passengers and goods. Capt. Torrey as Chief of Bureau commenced his duties early in 1875, and by a serious of circulars to Exhibitors, clearly explanatory of all necessary action on their part, prepared the way for a delivery of goods, never before equalled in promptness and care. On the opening day, (in broad contrast to that of all other Exhibitions,) a large majority of the articles were in their proper locations; the cases stored and all in readiness for an equally prompt removal at the close of the Exhibition. That some idea may be formed of the magnitude of this undertaking, it has been estimated that the number of cases and packages amounted to between 40,000 and 50,000, with an aggregate weight of about 26,000 tons. The Foreign Commissioners have recognized the admirable management of this department by an unanimous expression of their satisfaction.

In the moving of goods within the grounds Capt. Torrey took advantage of all the new appliances for such purposes, and thereby secured a prompt distribution of all articles to their appropriate sections. Railroad tracks were laid not only from one building to another, but also *through* the principal buildings, so that goods shipped from extreme sections of the United States were at once placed in position without change of car.

It is a matter of much congratulation that this great work has been accomplished with proportionately a much less force, and much more economically than ever before.

The official reports to be published by the Bureau of Transportation will contain all necessary details, and will be accompanied by illustrations and statistical tables.

PASSENGER TRANSPORTATION.

In this connection it is only necessary to state that the same management controlled the initial movement in this direction, as in relation to transportation of goods. Capt. Torrey took advantage of the occasion, and on July 5th, 1875, an experiment was made to test the carrying capacity of the railroads running into Philadelphia, and also that of the City Passenger roads. The results of this experiment proved that there was at that time a carrying capacity equal to nearly 150,000 persons, as that number were taken to the Centennial Grounds without difficulty on that day. Since then and during the period of the Exhibition, this number has been largely increased, and on what is known as the Pennsylvania Day there were at least 225,000 persons transported to and from the Centennial. When it is borne in mind that the bulk of this large number were delivered in a period of time not exceeding three hours, some idea may be realized of the remarkable feat performed under the head of Passenger Transportation; and when it is known, in addition, that there has been an average delivery of from forty to fifty thousand persons per day, and that there has not been a single accident during the entire six months, we may assuredly express the gratitude of the whole country at such wonderful results.

In this connection it is only just to refer to the admirable manner in which the railroad management centreing in this city has co-operated in carrying out the most complete system of passenger transportation ever inaugurated in the world's history. In contradistinction to the results of all former International Exhibitions, the *bulk* of the visitors have been brought by rail, the most accurate data furnishing proof that not less than *three-fourths* of all the visitors were transported to and from the Exhibition in this manner. When it is also considered that this has been done without accident and with comparative rapidity and comfort, it must certainly stand unrivalled as the best evidence of the good management and executive ability connected with the American railroad system and organization.

TRANSPORTATION ON THE PENNSYLVANIA RAILROAD.

The work done upon this road has been so large that it is impossible to give at this early date any details, but the figures for the transportation of passengers to and from the Centennial Depot alone, will aggregate at least *four millions.* The regularity of the arrival and departure of trains, the systematic method and celerity with which passengers have been deposited and taken away, have been the occasion of most favorable notice on the part of all foreign correspondents, who have not hesitated to hold up this road as an example for European railroads to take advantage of. In addition to the large number referred to above, who arrived at the Centennial Depot, it must be borne in mind that a very large number of Centennial visitors arrived at their depots, at West Philadelphia, Kensington and Camden, which at a rough estimate would be computed at one million additional, thus making in round numbers, a total of five million persons received and taken away, from the City of Philadelphia, in a period of six months time. The largest number on any one day arriving at the Centennial Depot, was on the 19th of October, when 33,919 were safely deposited within a few hours time. On October 26th, there were 32,993; and on September 28, 31,563. The result of this great work has been eminently satisfactory, and the management of the road have much reason for congratulation.

TRANSPORTATION ON THE PHILADELPHIA AND READING RAILROAD.

This road having a depot on the grounds, has had not only a populous section of the State to draw, but also through its local city lines, a large district from which it secured its daily travel. The following indicates the passenger traffic by this road to and from the Exhibition up to November 1st.

May, 1876	169,296
June	307,503
July	306,081
August	388,970
September	801,819
October	810,000
Total	2,783,669

The largest number, on September 28th, Pennsylvania Day, was 185,800. It is much to the credit of the Reading railroad, that all of this business has been done, and this large body of visitors moved to and from without the occurrence of a single accident.

TRANSPORTATION WITHIN THE GROUNDS.

The large extent of the grounds occupied by the U. S. International Exhibition and the distance of one building from the other, rendered it almost necessary to secure some convenient method of transportation; the result being the adoption of the narrow guage system as shown in the West End road. The track was laid so as to conveniently reach all of the buildings, and with the sidings is a little less than seven miles in length. The success of this road is a proof of the estimate in which it has been held by all visitors, as the following statistics will show:

Number of daily trains	8
Number of trips per train	14

NUMBER OF PERSONS CARRIED.

From May 15 to 31	125,363
During the month of June	505,704

During the month of July	460,558
During the month of August	589,334
During the month of September	1,054,465
During the month of October	1,048,718
Total to November 1	3,784,142
The largest number were carried on September 28, Pennsylvania day, viz.:	68,273

This railroad has been managed by a Special Corporation under the following officers: Dr. J. T. Hampton, *President;* R. W. Flower, Jr., *Vice President;* J. R. Mufflay, *Secretary and Treasurer.*

CITY PASSENGER RAILROADS, STEAMBOATS, OMNIBUSSES, &C.

It has been simply impossible to obtain any details in reference to the number of visitors transported by the various means above referred to, but assuming that the total number of visitors paid and unpaid that have entered the Exhibition Grounds, represent 10,000,000, or twenty millions arriving and departing. The following may be considered as a somewhat approximate result:

Arrivals and departures by railroad	10,000,000
Arrivals and departures by horse cars	4,000,000
Arrivals and departures by all other conveyances	2,000,000
Arrivals and departures on foot	4,000,000
Total	20,000,000

THE PRESS AND THE EXHIBITION.

The International Exhibition of 1876 has been largely dependent upon the Press of our Country for its success, and it is our pleasant duty to express the fullest recognition for their aid and support so generally extended. When this Exhibition was first originated, there were many honest doubters among the editorial profession, but the convincing proof of success has secured an army of friends. This gratifying result is largely due to the system adopted in the early history of this enterprise, by the establishment of a special Department of the Press, under the charge of a committee of the Board of Finance, whose special object was to supply information to the Press generally throughout our land. Under this organization every possible means was adopted to familiarize the American mind in advance with the plans and purposes of those in charge. The good will of our citizens was secured by supplying the opportunity to each to become personally interested in the great national work, made patriotic by the fact of its being completed during the anniversary year of our Independence. The work of the Department of the Press, in this labor of propagandism has been very extended, almanacs, pamphlets and circulars, were printed and mailed to all sections of our country—appeals were made to the farmers, bankers, clergymen, trades-people, mechanics and capitalists; all to the end that each and every one should have an individual interest in our success. So soon as the designs for the buildings were adopted, immediate steps were taken to have accurate engravings made of each building, electrotypes prepared and descriptions written, these electrotypes were then sent gratuitously to such papers as were willing to publish them, the result being that they appeared in over eleven hundred newspapers, in all of the States from Maine to Louisiana. As the work on these buildings progressed, special facilities were afforded to illustrated papers for sketches, and thus continued interest was kept up until the opening of the Exhibition. These illustrations not only appeared in this Country, but were widely circulated in Europe and the East, through the Foreign Illustrated Journals. In addition to these means of publicity, a series of large lithographic views were published, and being used for commercial purposes, were widely distributed throughout the entire country, and still further millions of small cards were printed and sent by mail in every direction. It can be safely asserted that in this connection, that no enterprise of any kind has ever been so thoroughly introduced as the International Exhibition of 1876.

Prior to the opening on the 10th of May, it became the duty of this Department to make suitable arragements for the convenience of such members of the Press, Editors, Correspondents, Reporters, etc., as might desire to attend the Exhibition. To this end a circular of invitation was issued to over eight thousand different journals, daily, weekly and monthly ; a just discrimination being exercised as to the number of tickets allowed to each journal. These tickets or passes were of three classes: 1st. The Complimentary Season Ticket, which was sent to the most prominent members of the editorial fraternity. 2d. The regular or Photograph Ticket, which was originally suggested by this Department, was adopted as the regular form of ticket for all parties attending the Exhibition business. The holder on receiving this ticket was requested to have his or her photograph inserted in a place designed for it, and upon each daily visit a printed date was punched out by the gate-keeper, although at first there were some objections to this system, it ultimately proved very successful, and a complete check upon the fraud which were so universally committed in connection with former Exhibitions. 3d. For the convenience of such members of the Press as were not able to be present but a day or two at a time, a special daily pass was prepared and taken up at the gate.

The following carefully prepared table will indicate to what extent these invitations were accepted by the Press. The figures herewith given indicate the number of press tickets issued by this department to separate persons, and also to what sections of the United States they were distributed, indicating that not a single State or Territory remained unrepresented, and that there were nearly five thousand individuals, connected with the Press of the United States, attending the Exhibition.

Alabama	13
Arkansas	9
Arizona	1
Connecticut	110
Colorado	11
California	46
Delaware	50
Dakota	2
District of Columbia	85
Florida	11
Georgia	35
Indiana	123
Illinois	338
Iowa	239
Idaho Ty	2
Indian Ty	1
Kentucky	72
Kansas	67
Louisiana	32
Maryland	93
Missouri	113
Mississippi	17
Massachusetts	286
Michigan	116
Minnesota	28
Maine	41
Montana	2
New York	805
Nebraska	32
Nevada	7
New Hampshire	44
New Jersey	284
North Carolina	27
Ohio	289
Oregon	7
Pennsylvania	1,070
Rhode Island	13
South Carolina	20
Tennessee	73
Texas	28
Utah	5
Virginia	139
Vermont	68
West Virginia	39
Wisconsin	97
Washington Ty	4
Total	4,994

In addition, the leading journals of Europe and Canada were represented by 356 correspondents, making a grand total of 5,350. A special count shows that the number of papers represented in

Pennsylvania were	409
New York	263
Massachusetts	88

these being the three States most largely represented.

In addition to the facilities afforded to the members of the Press attending the Exhibition, special circulars were prepared and sent weekly to four thousand separate journals, as occasion seemed to require. These circulars supplied the necessary information in reference to the progress of the Exhibition, the general arrangements, programmes for special weekly exhibits, information about Board and Lodging, Health Statistics, Transportation, etc., etc. These circulars met with unanimous approval, and were printed very largely in all sections of the country. Special financial statements were also published and widely distributed. During the progress of the Exhibition special excursions of press clubs were made from Ohio, New York, New England, Virginia, Canada, and the Southern States. These representative editorial bodies were at once supplied with tickets, and received every attention at the hands of this department, and the press of Philadelphia.

The result of the labor of the Department of the Press has been most gratifying, a careful examination indicating that special letters on the Exhibition have been written to and published in over four thousand journals in the United States, and it is just here where the real practical value of the International Exhibition will ultimately show itself. As a general rule all the correspondents have shown a most laudable desire to clearly inform all their readers, not only upon the beauty and value of the various foreign exhibits, but have, in most cases, made such comparisons as would incite personal interest on the part of our citizens to improvement in various directions, but specially in the improvement of household life by the advantages of art. To the lady correspondent specially has this been an object of attraction, and many a household will be beautified and made more happy as the result of this exhibition.

It will not be considered invidious in this connection to refer specially to the admirable letters of Mr. Edward King of the *Boston Journal*, Messrs. Bayard Taylor, Smalley and White of the *New York Tribune*, re-published in pamphlet form, Mr. Hart of the *New York Herald*, Mr. Stilson of the *New York World*, Mr. Fulton of the *Baltimore American*, Miss Robinson of the *New York Daily Witness*, Mr. Pember of the *New York Times*, and Mr. Townsend of the *Daily Graphic*. The various scientific and industrial journals have been fully represented, and special credit should be given to the *Scientific American* for the very complete and thorough manner in which it has described the mechanical wonders of the Exhibition. The *Nation* has given an admirable series of letters written from an æsthetic point, and in all the monthlies have appeared very admirable articles. The press of the City of Philadelphia have devoted special time and attention, not only to the presentation of a daily record of events, but also to regular reports upon the exhibits of each country, and the articles that have appeared in the *Philadelphia Ledger* are recognized as thoroughly exhaustive and complete, that there has been application from all quarters for their re-publication in book form.

THE FOREIGN PRESS.

A visit from Mr. John Walter of the *London Times*, has been the principal incident connected with the Foreign Department; but the large general attendance of foreign correspondents is a most remarkable indication of the interest taken abroad in our

Exhibition. It has been estimated that more foreign newspapers were represented here than at the Exhibitions in London, Paris and Vienna combined; among these specially to be noted, may be mentioned the *Times*, *Standard*, *Telegraph*, *News* and *Illustrated News* of London. *The Temps*, *Journal des Debates*, *Patrie and Galiquoni of Paris*, *Independence Belge* and *Moniteur* of Brussels, *Standard of Amsterdam.* The following cities were also represented by correspondents: Berlin, Vienna, Pesth, St. Petersburgh, Moscow, Milan, Rio Janeiro, Madrid, Leipsic, Stockholm, Copenhagen, Constantinople, Shanghae, Melbourne and the Sandwich Islands, there being in all including Canada, 351.

In conclusion this Department would express its indebtedness to all with whom it has had connection for the universal courtesy and pleasure relations that have existed since this great enterprise was initiated and full confidence that much of the success with which we have been favored is due to the gentlemen of the Press.

PENNSYLVANIA AT THE CENTENNIAL.

As was to be expected, Pennsylvania took a prominent position at the Centennial Exhibition, largely exceeding every other State in the number of exhibitors and the variety of their exhibits. While other sections of the country were, with rare exceptions, either lukewarm or antagonistic, the citizens of our own Commonwealth never doubted for a moment the complete and final success of the Exhibition. To make it simply a Philadelphia show, as its enemies claimed it was to be and so stigmatized it, was to do something repulsive to every patriotic thought and feeling, and yet if it came to the worst, they were firmly resolved to have the Exhibition, even were they obliged to do it single handed and pay all the expenses themselves. This indomitable spirit never flagged, and finally the people of the whole country were awakened into sympathy with their enthusiasm.

The individual subscriptions to stock of the Board of Finance, made by Pennsylvanians, amounted to 187,218 shares, upon which $1,749,468 was paid, while the total number of shares subscribed for was 245,578, upon which $2,278,950 was paid. Philadelphia appropriated $1,575,000 to the Exhibition, and the State Legislature $1,110,000, making the total contributions from Pennsylvania (including $50,000 donations,) $4,484,468. Adding to the appropriation of $1,500,000 by the United States Government, $500,000 appropriated by other States for the erection of State building and the display of State products, and $529,482 paid by citizens of other States on account of stock of the Board of Finance, the whole is but little in excess of one-half of Pennsylvania's contribution. There were exhibitors from Pennsylvania in every department of the Exhibition, the total number being 3,049. They were distributed as follows: Department of Agriculture, 934; of Manufactures, 826; of Machinery, 528; of Education and Science, 270; of Art, 243; of Mining and Metallurgy, 161; of Horticulture, 87.

THE PENNSYLVANIA BUILDING.

The Pennsylvania Building, for whose erection the State appropriated $15,000, is situated north of the western end of machinery Hall, and fronts on the largest of the chain of lakes, commanding a pretty view of green slopes, fountains, and the back ground of tall trees in Lansdowne valley. It is one of the pleasantest sites on the grounds, and is rendered still more attractive by being adorned with beds of rich flowers and shrubbery. The building is 97 feet long and 55 feet wide, surrounded by a tasteful piazza. It is one-story high, with attic windows, the height to the eaves being 22 feet, and to the peak of the slate-covered roof 39 feet. The front elevation consists of a Gothic tower with turrets on each side. In these are little balconies, from which pleasant views of the grounds may be had. Above the doorway is a keystone in gold, with the word Pennsylvania in black letters. The building is divided into three sections, and is so arranged that it presented one of the coolest and most spacious reception rooms which was to be seen in any of the State buildings. This central section consists of a wide hall, 30 by 50 feet, which rises clear to the roof, is painted in light and cheerful colors, and is neatly and coolly furnished with matting, cane-seated chairs and benches, tables and a piano. The roof is supported by Gothic arch trusses with elaborately turned wood work. In this room a register for visitors was kept.

On the left of the hall were the Governor's room and the office of the State Board of Centennial Managers, and on the right the parlors for gentlemen and ladies respectively. All were richly and appropriately furnished, with dressing rooms and other conveniences attached.

THE MUNICIPAL BUILDING.

The building erected for the municipality of Philadelphia was situated to the east of Horticultural Hall, and was used by the mayor on the occasion of his reception. On the evening of August 29 the mayor there held a reception, at which the members of the city government, the Centennial Commissioners, the foreign commissioners and judges, and a large number of distinguished officials or indirectly connected with the Centennial, had been invited. The building and grounds were illuminated, and a handsome collation in the main dining hall of Lauber's restaurant. There were no formalities observed, and the affair passed off to complete satisfaction of the large number of guests present.

On July 13 councils appropriated $16,000 to the mayor "for the official reception and entertainment by the municipality of distinguished visitors to the city during the Centennial Exposition." The appropriation became a law without the mayor's signature. The expenditures were as following: For furnishing the Municipal Building in Fairmount Park, $1,028 60; for illumination and decoration of building, $423 50; for music, $295 00; for wages and employees of said building, $395 55; for carriage hire, $101 00; for collations and banquets, $7,663 72. The total amount expended was $9,907 37, and the balance of $6,092 63 merged back into the city treasury.

PENNSYLVANIA EDUCATIONAL HALL.

The building in the Exhibition grounds called the Pennsylvania Educational Hall, in which was displayed the educational exhibit of the State of

Pennsylvania, was erected under direction of the Superintendent of Public Instruction, with money appropriated by the Legislature for the purpose and voluntarily contributed by school boards, institutions and individuals. The size of the building, which was of tasteful design and octagonal in shape, was about 100 feet in diameter ; the wings each 40 by 24 feet, and the inner, central room 48 feet in diameter. A special building was erected, because at the time the matter was taken up in earnest—about the first of March, 1876—the Centennial Commission could not furnish the amount of space desired for the exhibit. All the material displayed was furnished in response to a request for it, and not a single article sent in was rejected. It was a complete representation of all the principal educational agencies in the State, beginning with the Kindergarten and ending with the University.

THE PENNSYLVANIA BIBLE SOCIETY

erected a building in the grounds, south of Horticultural Hall, 29 by 20 feet, for the exhibition of their publications.

PENNSYLVANIA DAY.

The most notable day at the Exhibition, and the most successful in the history of International Exhibitions, was Pennsylvania Day—the 28th of September—notable, not so much on account of the high dignitaries present as on the 10th of May, the opening day, but for the immense crowds of people who not only filled to overflowing all the buildings, both large and small, but swarmed, a single, dense, moving mass, blackening every avenue, grass plot and ravine within the grounds, and yet behaving with such order, cheerfulness and propriety as to be almost a wonder to ourselves. No rowdyism was seen ; not a single arrest was made, and the police had nothing to do but answer politely the questions of strangers. Made a public holiday by the proclamation of the Governor, the stores and workshops of the city were closed, and many employers not only made no deduction in wages, but paid all the reasonable expenses of their employees for the occasion. The weather was delightful, and nearly 275,000 persons passed into the grounds during the day and evening, being over 100,000 more than ever visited a World's Fair in a single day. The horse car lines had more than they could attend to, and trains from every portion of the State were running to the city in four, five and six sections, all loaded as full as they could hold. Every kind of conveyance was impressed into the service, and the strange spectacle was seen of furniture cars, grain carters' wagons, safe manufacturers' drays, bakers' and milk carts arriving in quick succession and depositing their loads of humanity on the broad sidewalks of Elm avenue.

Governor Hartranft's reception at the Pennsylvania State Building, in the afternoon, far exceeded in interest and brilliancy any Governor's reception held at the Exhibition. The building had been elaborately decorated for the occasion, both inside and out, and in the west room was placed, over the large portrait of the Governor, in golden letters, the word "Welcome."

At a quarter to ten o'clock, the Pennsylvania Board of State Managers met at the State Building and formed in procession, headed by the First Brigade Band and a cordon of police, and proceeded to the Globe Hotel, outside the grounds. Here they met Governor Hartranft and staff, and soon after they returned to the State Building and were joined by Hon. Joseph R. Hawley, President United States Centennial Commission; Mr. John Welsh, President Centennial Board of Finance; the State Board of Managers, including the Joint Legislative Centennial Committee and members of the National Centennial management, proceeded to Judges' Hall, where a distinguished audience of representative ladies and gentlemen was assembled. The exercises were opened with the singing of the following hymn, composed for the occasion, by the Corinthian Quartette Club, connected with Corinthian Chasseur Commandery, No. 53, K. T.:

PENNSYLVANIA DAY.

Centennial, September 28 1876—The Prayer of her Loyal Sons.

Great God! our Father, hear!
Lend now Thy gracious ear;
  To Thee we pray.
Give of Thy bounteous grace;
Bless of mankind each race;
Let all Thy goodness trace,
  In life's dark way.

Gread God! our Father, hear;
Teach us Thy name to fear,
  In holy dread.
Make wars and strife to cease;
Oh, give perpetual peace;
So earth shall yield increase
  Of "daily bread."

Great God! our Father, hear!
Guide all, both far and near,
  In our dear land.
In Union, strength to find;
One, both in heart and mind;
Oh God! Thy people bind
  In love's strong band.

Great God! our Father, hear!
While for our country dear
  We wait and pray.
Guard from invading foe;
Keep from intestine woe;
Some good for "token" show,
  Thy love display.

Great God! our Father hear!
As suppliants we appear
  Before Thy throne.
Let not the foot of pride
Come near us to abide;
Be Thou our earthly guide
  And lead us home.

Great God! our Father, hear;
Make Thou our pathway clear
  With heavenly light.
Bless Thou our beauteous land,
While we as brothers stand
In phalanx firm and grand,
  To guard the right.

Upon the announcement by Chairman M'Michael of the appointment of his Excellency to preside, Governor Hartranft came forward, and upon assuming the chair was warmly welcomed. He spoke as follows:

My fellow-citizens: One hundred years ago this day the colony of Pennsylvania, through its representatives in Convention assembled, formally transferred its allegiance from the King of Great Britain to the American Congress and adopted the first Constitution of the State. Among the names of the members of the Convention will be found many intimately associated with the prosperity and honor of the Commonwealth in subsequent years, while its deliberations were presided over by that immortal genius whose contributions to science and philosophy have only been limited by the confines of the world—Benjamin Franklin. What mighty changes have been wrought in our habits and condition as a people since that day when our fathers dissolved all ties with the mother country and we became a part of this great nation; a nation that has shown what are the possibilities of man under a republican form of government, founded on reason and humanity, and consecrated to the fullest liberty. We have only to take the proportions of this immense Exhibition to see how widely, broadly and deeply we have builded. Here in these buildings are the manifold evidences of our material, moral and mental development, and we can, without the appearance of vanity, challenge the world to show in its history when a nation has crowded into a century's growth so much that was beautiful and useful to humanity, as has America in the hundred years of achievement which this Exhibition is to commemorate.

In this century Pennsylvania has enacted a great part, and it is fitting, therefore, that her people should gather here on this hundredth anniversary of the adoption of her first Constitution to look upon their handiwork, to witness the proofs of their development and progress, and to pledge anew their fidelity to the great State their fathers founded.

Your share, Pennsylvanians, in this great Centennial enterprise, which is here universally proclaimed to be the grandest exhibition the world has ever seen, cannot but be flattering to your self-esteem; and in congratulating yourselves upon the part you had therein, I know there will be no thought that will give you more satisfaction and pleasure than the reflection that it was largely due to your energy and vast contributions that the Centennial was given an international character, thereby not only attracting to our shores people from other climes, but uniting more indissolubly the bonds that bind together the sections of our common country. Great praise is due to the Centennial Board of Finance for their perseverance under the most unfavorable circumstances and making success out of failure. I therefore take great pleasure in extending them the thanks of four millions of Pennsylvanians for their patriotic work.

General Hawley was then introduced and spoke as follows:

Ladies and Gentlemen:—In looking upon the grand scene before us to-day, within this building and without, somewhat for the time being in the attitude of a mere spectator, my mind naturally reverts to the early days when this enterprise was, so to speak, in darkness. But I refer to this not for the purpose of rehearsing those early troubles, but merely to suggest a contrast to the beauty and magnificence of the surroundings of to-day. It is our theory that what is to be done by a free people can best be done by the whole people, and upon that we base our Government. We hold that all the men of a nation know more and can do more than any portion of their number. Imagine to yourselves what we might have done by way of an Exhibition and a celebration if the whole forty-seven States and Territories had put themselves into this work as grand old Pennsylvania has put herself into it. [Enthusiasm.]

Now, we are very glad to have done well, for we have tried to do well, but when any man thanks us for what has been done, I feel like saying let the American people thank Pennsylvania. Had the burden of a great war, a sudden invasion or any extraordinary calamity fallen upon any one section of the Union, however distant or remote, our fellow citizens, we know well, would have upborne the honor of the flag. [Boisterous approbation.] Our people did make a mistake in supposing that this great national undertaking and its responsibility belonged to any single city or State. It was the work of a nation, and late though the hour, the nation is now awaking to a realization of the fact. The time will come when those who did not foresee in the Centennial its true beauty and real grandeur will thank Pennsylvania, will thank Philadelphia for having seen it in time and having redeemed the honor of the flag. [Applause.]

It is not vanity; it is not a mere hasty feeling of pride that induces us to say now, after our friends from all the world have said it to us, that this is, indeed, a great exhibition; that it is obviously the largest, in many respects, the best, and, taking it altogether, the most interesting exhibition that the world has yet seen.

The occasion is peculiar. I trust that the benefits to result from it as a means of extending knowledge and friendship among our own people, and in cementing the bonds of friendship among all the nations of the world will be commensurate with its greatness, and will surpass the hopes of its most early and ardent supporters. I believe that they will. I believe that it has been good for the world that this Exhibition has been held; that it will strengthen the foundations of republican institutions, and that it will teach us to know each other and our Government and our true duties under it.

Mr. John Welsh, President of the Centennial Board of Finance, the next on the list of orators, upon being introduced by Governor Hartranft was specially complimented with generous applause of his auditors, which broke forth at intervals during his remarks, and supplemented their conclusion. He spoke as follows:

Ladies and Gentlemen:—I am here as an humble member of that great army of workers, to whom we are indebted for the wonderful creation by which we are surrounded. It is true, as has just been said, that the burden fell largely upon our native State, and upon our native city, but the glorious memories identified with our local history could not fail to incite us to be foremost in this great effort in behalf of the nation. I would by no means have you fail to award due credit to all who have come to our aid, although that aid may not have been in the measure that we expected and desired. There are circumstances which may well be pleaded in apology, and I hold that these constitute a sufficient apology. We have now the evidence of the feeling of this nation, commending what has been done and holding it up as a result which is to be looked upon as the spontaneous offering of the nation. Let me ask who of us could look upon the Centennial year without feeling that that which has come to pass would come to pass? Who that knows the American heart can fail to find in its sentiments such as those which must find free expression in the Centennial year, and which could not fail to manifest in some form or other that sense of gratitude which now fills every bosom because of the multitude of the blessings vouchsafed to us?

The speaker's voice here became partly inaudible, at the reporter's seat, but he was understood to add that, while the remotest among other parts of the country may have been regarded as not having co-operated heartily in the great work, he entertained the fullest confidence that what had been done was satisfactory, and a source of pride to the whole country. He then added: I have said quite enough, but I beg you to understand that what is now here is the work of the people, of the whole people, of this great nation. It is the work of the nation. It is the expression of the sentiments of those who have not aided as well as those who have aided. It is purely and entirely national in its character and in its expression.

Hon. Benjamin Harris Brewster, the orator of the day, was then introduced, and upon being cordially welcomed, proceeded to deliver the oration, which was occasionally applauded, the eulogy of Franklin especially receiving commendation. He spoke as follows:

Fellow Citizens:—On the 24th of August of this year I received a communication from his Excellency the Governor of this Commonwealth, requesting that I would prepare and deliver, on behalf of the people of Pennsylvania, such an address as, in my judgment, would most properly represent the history and growth of the Commonwealth for the past one hundred years. His Excellency selected this day, thinking none so appropriate as the centennial anniversary of the adoption of the first Constitution of the State of Pennsylvania.

Since I received that communication conferring this distinguished duty upon me I have been seriously ill, and have, till within a few days, even doubted whether I would have sufficient strength to perform the task that was set before me. But the occasion is a commanding one, and it becomes me to do my best rather than to flinch away from so noble an obligation. Let this statement explain to you why it is I am obliged to be brief. Indeed, the occasion itself will require brevity. The large assemblage that is gathered here must not be detained, by a prolific address, from viewing these wonders of art and mechanical skill, which we have gathered in from all parts of the world, as the only fit emblems of those glories of which we have to boast, and of that elevated civilization of which we are the leaders —"the victories of peace," first proclaimed and practiced here in Pennsylvania, when first this colony was founded, establishing peace as its corner-stone, and pronouncing industry and frugality as the greatest virtues of a free Commonwealth.

HIS ORATION NOT STATISTICS.

I shall not undertake here, even in an abridged way, to recite to you tabular statements of the increase from time to time of our wealth, our resources, our capabilities in agriculture, manufactures or arts. So great and so steady has been the advancement of the people of this State in the development and acquisition of its natural resources that volumes have been written, containing fatiguing tables, which are wise to record and useful to be read and remembered, but they are suited for the eye of the student and thinker better than for the ear of the hearer or mouth of the speaker.

I shall not fatigue you by even an abbreviated recital of the events that have occurred or the condition of the people of this province prior to the hundred years from this date. About one hundred and ten years ago Benjamin Franklin—who still is the greatest public man that this country ever produced, and who is a philosopher and a thinker to be ranked with Archimedes, Pythagoras, Socrates, Plato and Aristotle—in his examination before the committee of the House of Commons declared that the white inhabitants of Pennsylvania at that day numbered but one hundred and sixty thousand, and that the white inhabitants of North America, from 16 to 60 years of age, were but about three hundred thousand. Contrast that with our present condition.

THE MARROW OF THE CITY'S HISTORY.

The city of Philadelphia, where you now are, contains eight hundred and seventeen thousand four hundred and forty-three citizens, and it lies and they live in an area of one hundred and twenty-nine and one-eighth square miles. It has a thousand miles of streets and roads opened, and over five hundred miles of these are paved. It is lighted by near ten thousand gas lamps. It has one hundred and thirty-four miles of sewers, over six hundred miles of gas mains, and five hundred and forty-six miles of water-pipes. There are over two hundred and twelve miles of city railways, and over eighteen hundred passenger cars passing over them daily; three hundred and twenty-five steam boilers; more than four hundred public schools, with suitable buildings, and over sixteen hundred school teachers, and over eighty thousand pupils; thirty-four thousand bath-rooms, supplied with hot and cold water, and for the use of that water the citizens pay more than a million dollars annually. Four hundred places of public worship, with accommodations for three hundred thousand persons. Nine hundred manufactories, having a capital of near two hundred million dollars, employing one hundred and forty-five thousand hands, the product of whose labor is near four hundred million dollars. In 1873 we exported over thirty-four million dollars, and imported upward of twenty-six million. The amount paid for duties is near eight million five hundred thousand dollars. The real estate assessed for taxation is five hundred and eighteen million, and we collected nearly nine million dollars for taxes.

A STEADY MARCH FROM 1776.

The very Park in which this Grand Exhibition is now made contains 2,991 acres and is one of the largest in the world, and is enjoyed every year by millions of people, and we have 130,000 neat and comfortable residences and homes. Compare this condition of our great city now with its condition in 1776 and 1777. In October, 1777, General Howe, then being in possession of Philadelphia, had an accurate census taken, and it was ascertained that in the city and Liberties there were but 5,470 houses, and of these 587 were untenanted, and then but 21,776 inhabitants, exclusive of the army and strangers, and about the same time the number of churches was but 16. Why, the population of the State itself, from being but 160,000, is now near 4,000,000.

From the day that Pennsylvania renounced her allegiance to the Crown of Great Britain, and dissolved and overthrew the Proprietary Government, has her march been steady and uninterrupted in the course of political, social, commercial and mechanical prosperity. In population she exceeds the Netherlands, Switzerland, Denmark, Scotland, Portugal, Greece, Chili, Morocco, Columbia, the Argentine Confederation, Peru, Venezuela, Bolivia and Paraguay, and in dignity of character as a people she knows no superior. Since 1776 great cities that were unknown have grown up within her borders, and thousands now dwell where at that time was a wilderness frequented by wild animals. Allegheny City, Harrisburg, Lancaster, Norristown, Pittsburg, Reading, Scranton, Wilkesbarre, Williamsport and York and Erie were then, some of them, mere straggling settlements, and most of them did not exist.

OUR ELEMENTS OF WEALTH.

Within the borders of Pennsylvania there are elements of wealth and material for productive industry in quantities and of a character that are not to be found in any part of the United States, and I think I may safely say in any part of the world. I speak of her coal fields, anthracite and bituminous, and of her ever-flowing fountains of petroleum, and there are also her agricultural resources, her forests, her quarries of marble and of limestone and mines of iron. How much better is it for us as a people that we possess these elements of wealth, that stimulate all our energies, skill and honest industry to produce and use, than to have mountains of gold or caves of precious gems; such wealth as that would debauch and demoralize. It would make the rich a creature of silken luxury and the poor the abject slaves of these vicious masters.

The productive industry of this State down to 1870, in agriculture, was $183,946,027; in mining, $76,208,390; in manufactures, $711,894,344; and in fisheries, $38,114. There were 11,516,965 acres of productive land,

and of woodland, 5,740,864 acres, making in all 17,994,200 acres of land. The cash value of the farms was $1,043,481,582. The value of implements of machinery, $35,658,096. Her live stock was $115,647,075. The whole value of her farm productions, $183,946,027. The coal trade of Pennsylvania commenced in 1820, with a total production and sale of 365 tons. In 1873 the State produced 22,828,118 tons of anthracite and 6,085,222 tons of bituminous coal. About the year 1858 the Penn Rock oil company was organized on a farm near Titusville. It produced about eight barrels a day. From that time down to 1870 there have been produced 32,512,226 barrels of this oil, of which 15,751,246 barrels were exported to all parts of the world. Now compare this condition of our State with its resources one hundred years ago, when Dr. Franklin said there were about 160,000 white inhabitants, and when, according to the highest statement given when it assumed sovereign power, its whole population was not over 300,000.

THE PUBLIC SCHOOLS OUR GREAT TRIUMPH.

By the original frame of government and the great law enacted in the first year of the province under the authority of William Penn, it was provided that schools should be established for the education of the young, and the motto selected for that school by William Penn himself was:

Good instruction is better than riches.

From that time down to 1749, under this policy, a few public schools of considerable merit were opened by the Quakers and by the Moravians in Philadelphia and in Bucks county. In 1749 the germ of the University of Pennsylvania began in the form of an academy, and from it there arose three departments, the academical, the collegiate and the medical. The fame of that medical school is one of the glories of the whole nation. In it such men as Shippen, Rush, Wistar, Physic and Hare taught, and since then the great Jefferson Medical College has arisen; also several others of considerable repute.

The Constitution of 1776, created in the very darkest hours of our Revolution, provided that a school or schools shall be established in each county by the Legislature for the convenient instruction of youth, the salaries to the masters paid by the public as may enable them to instruct the youth, at low prices, and all useful learning shall be duly encouraged and promoted in one or more universities; and the Constitution of 1790 provided that the Legislature, as soon as conveniently may be, shall provide by law for the establishment of schools throughout the State in such manner that the poor may be taught gratis, and that the arts and sciences shall be promoted in one or more seminaries of learning.

THADDEUS STEVENS, THE GREAT COMMONER.

Under these provisions laws were from time to time passed the object of which was to give a practical effect to that purpose. For a long time the schools were shunned by the rich and those who affected the ways of the rich, and were called pauper schools. In 1827 a society was formed in Philadelphia for the promotion of education in the State, and by its efforts a law was enacted in 1834 which did away with this odious idea of pauper education. This was the beginning of a new era, and of our common school system. Attempts were made in the succeeding Legislature to break down this enactment, but Thaddeus Stevens and Governor Wolfe maintained the law and defeated its opponents, and in 1836 the law was revised and improved, and in 1854, by a further improvement, it was made firm and became a system that could be enforced.

I shall not enter into a detailed description of the provisions of these various statutes, but the credit of this law and the enforcing it is due to the Hon. Thos. H. Burrowes, the great Superintendent of Public Schools and of the Soldiers' Orphan Schools of the Commonwealth. Beside these public schools, we have now more than thirty colleges and universities, possessed of large libraries, expensive apparatus and numerous faculties of learned men, who instruct a large and governing body of students. We have one law school; we have ten medical schools; we have over seventeen theological schools, scattered in different parts of the Commonwealth.

PEACE OUR FIRST AND LAST POLICY.

Not an acre of ground in this State was ever obtained by conquest; every foot of it was purchased and honestly paid for. As far down as 1792 the Commonwealth purchased first from the Indians, and then from the United States the small triangle now part of Erie county necessary to secure to the State a good harbor on Lake Erie.

The number of counties at the beginning was 3—Bucks, Chester and Philadelphia There are at this day 66. One hundred years ago there were but 10. The Commonwealth having purchased their whole territory, having done her share from the beginning in the Revolution; having, with the aid of the general government, quelled three civil wars within her borders; having settled the boundary disputes with adjacent States, began the performance of her duty as a Commonwealth of free men. It began to develop its resources, to encourage domestic industry, to enact wholesome laws, to maintain the dignity and purity and encourage the prosperity of her people. Had it not been for the purchase of Louisiana by Mr. Jefferson, which gave an open avenue to the sea, the then far West Pennsylvania and New York would have been filled with emigrants to overflowing. By the judicious purchase of that French colony the swarm of emigration passed over Pennsylvania and came into it, multitudes of her own children on their westward march to the great Pacific. This, for awhile, hindered the growth of the State in population and diminished the values of its lands.

THE HIGHWAY TO THE WEST.

It became then the highway of the West. Then it transported men over its soil to populate the wilderness that lay beyond. Now it is the highway over which the children of those men bring their wealth and their products to the sea. From the first we enjoyed a great system of public improvement. The first stone turnpike in the Union was made here, and so the first canal, over one hundred miles in length. The stone turnpike from Lancaster to Philadelphia, sixty-two miles in length, was commenced in 1792, and finished in 1794, at a cost of $465,000, by a private company, and as late as 1832 two hundred and twenty turnpike companies had been authorized by law, and most of them constructed to the extent of three thousand miles, and, in 1843, a continuous line of stone turnpike extended from Trenton, on the Delaware, to the boundary of Ohio, 340 miles in length, with numerous bridges, costing more than the celebrated road of Napoleon over the Simplon. From time to time, from the year 1791 to the year 1840 did the State perfect and construct by itself and incorporated companies a multitude of canals, the length of which was 1,280 miles, and to that date the total length of railroads was 795 miles, 118 of which belonged to the Commonwealth. In 1847 the great Pennsylvania Railroad was begun, and in six and one-half years completed, in the building of which some of the most bold and astounding feats of constructing engineering were accomplished. The Philadelphia and Erie Railroad was begun in 1852 and finished in 1864. In 1857, from motives of public policy, the Commonwealth sold its public works, and they are now possessed and used by private corporations. There are nineteen canals in the State of Pennsylvania and one hundred and thirty-nine railroads in active operation. I must not forget to mention a peculiar feature of these internal improvements, when they were begun, in 1791 or thereabouts.

RIVERS, BRIDGES AND CANALS.

The State of Pennsylvania is intersected with several large rivers and their branches. In the winter and summer their broad beds lie dry, a feeble stream of water trickling down the mid channel; in the autumn and spring time they become raging floods; the rains of the autumn and the melted mountain snows of the spring make them fast, deep, furious, rushing rivers of water. Over these the State in constructing her highways was obliged to build large and expensive bridges, and she did build some of the grandest structures of this kind that were ever seen in the world, some of stone and some of wood, the most remarkable and astonishing of which are the vast wooden bridges that span the Susquehanna and its branches and the Juniata and its tributaries.

As if by providential atonement, when the difficulties were the greatest as to the manner in which such bridges could be constructed—and there seemed almost a hapless task to build such as would answer the ends desired—a common millwright, a man by the name of Burr attained and executed the task, without which many of the torrents would never have been passed. To this day they remain evidences of his genius, being practical solutions of what was supposed to be insuperable difficulties.

THE DISCOVERY OF COAL.

In 1790, in the Schuylkill region, on the broad mountain, Nicho Allen, a hunter, camped out for the night under a ledge of rocks and kindled some fire on the fragments of black stone. He lay down to sleep. In the night he awoke and found the rocks aflame. He made his discovery known, and five years later the blacksmiths of Schuylkill county were using this coal in their forges, and, as a remarkable coincidence, Philip Ginter, a poor hunter, in 1791, on the Bear Mountains, nine miles west of Mauch Chunk, made a like discovery.

I cannot undertake here to trace the history of the development of these coal fields, but I must say that from that hour the destinies of this State were changed, and from an agricultural people we were destined to become a mining and manufacturing Commonwealth that would bring the whole of the United States, east and north, and even south of us, tributary to us. But coal and our iron, like our men, were to conquer wherever they went. From the time that the British troops abandoned this city no foe, foreign or domestic, has ever gained a foothold in Pennsylvania, and they never will. Of the public men of this State I shall say but little. Those who were connected with the Revolution have been embalmed in the beautiful rhetoric of accomplished scholars, whose works have been studied and read with delight by all who now hear me.

THE MEN OF PENNSYLVANIA.

Of those who followed them in their career I must say something. Of those who are living, decorum requires that I should say nothing; their day of judgment is not yet come. When their great account is ended the impartial historian will tell of them and their deeds. I will, however, remind you that we have given to the Government of the United States citizens of our Commonwealth, officers of distinguished merit. There was Albert Gallatin, the two Dallases, father and son; Samuel D. Ingham, and our own Meredith and William Wilkins, men of remarkable and conspicuous merit in private and public life, and Henry Baldwin and Robert C.

Grier and James Wilson, Judges of the Supreme Court of the United States and of our own Commonwealth.

We have had upon our own bench Tilghman, and Gibson, and Lewis, and King, and Woodward; and at our own bar we have had Sitgreaves, and the Ingersolls, and Ross, and Binney, and Sergeant, and Meredith, *illustris honoris.* Others I would mention who passed through lives of usefulness and distinction, but the time will not permit me to pause and gather up the list of these eminent persons. And I must not forget the three great Governors that first presided under the Constitution of 1790, Mifflin, M'Kean and Snyder, names that will be remembered with veneration and honor as long as the Commonwealth lasts, real representatives of Pennsylvania, and her sturdy people. But there is one other whose name I must not forget. In the midday of his manhood he stood before the world the most perfect and accomplished representative of real American gentlehood. I mean Nicholas Biddle. He was a man of whom this State and this country has been proud, and whose name and fame she will again cherish and honor.

THE UNITED STATES BANK.

Gifted by nature with a beautiful and winning presence he had a mind stored with learning and a grace and force of expression that was magical. Early in life he became the president of the last Bank of the United States by the appointment of Mr. Monroe. The institution had suffered in the first days of its existence by maladministration, and I have always thought that it never had fully recovered from the injuries it then received. Mr. Langdon Cheves undertook to reorganize and restore it to its credit and strength. He held the presidency for a short time, and, by his own request, he was relieved by Mr. Biddle. The history of that institution was one of disaster. It went through a fierce political contest that would have destroyed any institution connected with commercial transactions and financial credit.

The institution itself represented a vicious union between commercial finance and public affairs, and sooner or later it must have inevitably broken down. In this conflict Mr. Biddle bore himself bravely, heroically and with transcendent ability. But his bank was overthrown, and with it he fell the victim of the system. His enemies hindered him and hurt him, but his indiscreet friends prostrated him, but with all this those who knew him and those who will hereafter read and learn the history of this gentleman, the labors that he underwent, the extent of his attainments, the perfect refinement and polish of his nature and the patriotic purity of his principles will learn to honor and admire him as one of the first public men that ever adorned the annals of this or any other State.

THE POLITICAL HISTORY.

Before I conclude I will advert to a few facts connected with the political history of the Commonwealth and that relate directly to the occasion we now commemorate. In 1682 William Penn presented the great law for the government of this province, containing sixty-one chapters that had been carefully prepared by him. I never read it, but I am impressed with a sense of veneration for that man's wisdom and almost superhuman forethought. I do not wonder that Mr. Duponceau, in his celebrated address before the Philosophical Society, ranks him with Solon Lycurgus. It is marvelous to see the reason, liberality and prudent forecast of this man. At this day there does not exist a paper that excels it in a high, philosophical appreciation of the rights and duties of citizenship.

But when 1776 came, the people of these United States and the representatives of the United States of America in general congress assembled and declared that they were free and independent States, that the people of this province forthwith abolished the proprietary government and established the Commonwealth of Pennsylvania. Take that paper and read it, and read it again, as I have read it, with wonder and admiration. Remember that at that time such things were new and unknown ; that it was the first of these great fundamental laws that have established Commonwealths and upheld public and private liberty and enforced obedience to law and order. Read the preamble of the Declaration of Rights, and you will read it with instruction and admiration and delight.

A TRIBUTE TO THE OLD CONSTITUTION.

None have ever since been composed that can excel it in all the necessities and requirements of such a document. It has passed away. It was superseded because it gave too much power to the Legislature—power that it was necessary then to give because of the pressing exigencies of the dark days in which it was made. There are provisions in it which it would be well to place in every Constitution. In the thirty-sixth section in the chapter in the plan or frame of government you will find this remarkable passage :

As every freeman, to preserve his independence, if without sufficient estate, ought to have some profession, calling, trade or farm, whereby he may honestly subsist, there can be no necessity for or use in establishing offices of profit, the usual effects of which are dependence and servility—unbecoming freemen—in the possessors and expectants, faction, contention, corruption and disorder among the people. But if any man is called into public service to the prejudice of his private, he has a right to a reasonable compensation, and whenever an office, through increase of fees or otherwise, becomes so profitable as to occasion many to apply for it, the profits ought to be lessened by the Legislature.

The fourth section of the same chapter has a remarkable provision for the creation of a Council of Censors, whose duty it was:

To inquire whether the Constitution had been preserved inviolate in every part, and whether the legislative and executive branches of the government have performed their duty, or assumed to themselves or exercised other or greater power than they are entitled to by the Constitution. To inquire whether public taxes have been fully laid and collected in all parts of the Commonwealth; in what manner the public moneys have been disposed of, and whether the laws have been duly executed. They shall have authority to pass public censures, to order impeachments and to recommend to the Legislature the repealing of such laws as have been enacted contrary to the principles of the Constitution.

THE END OF THE HUNDREDTH YEAR.

This was the last section of that memorable paper—the section that was abolished in the Constitution of 1790, and not restored by the act of 1838 or 1873. From our experience one would almost wish that it still existed. And now, one hundred years after that great paper became the fundamental law of this great Commonwealth, we stand here to commemorate its enactment, and to exult—thankfully exult—over the marvelous prosperity of our people. To what do we owe that prosperity? Not to emigration, for men have emigrated from Pennsylvania to strengthen and dignify other Commonwealths. The flood of foreign emigrants swept over our State, not into it.

The freemen of Pennsylvania this day are proudly the descendants of their ancestors of 1776. The bulk and body of our population are Pennsylvanians. We owe it to our love of freedom and our obedience to law. We owe it to the natural wealth of our soil, and our mines, and our quarries and our forests, and our irrepressible-laborious industries—honest spirit of enterprise. We owe it to the prudence and care of Almighty God. Let us not then forfeit it. Let us adhere to this sacred institution of our great founder and his great successors. Let us use these bounties frugally, temperately, and let us exclaim thankfully and devoutly: To Thee, O God, we owe all this. We acknowledge Thee to be the Lord. All the earth doth worship Thee, the Father everlasting.

Brief and appointed addresses were also made by Ex-Governor Bigler, Ex-Governor Pollock, Hon. Simon Cameron, Justice Strong, formerly of the Supreme Bench of Pennsylvania, and now of the United States Supreme Court, and Ex-United States Senator Scott. Upon the conclusion of Senator Scott's remarks Governor Hartranft announced that the exercises had terminated. The audience accordingly dispersed.

When the exercises at the Judges' Hall were concluded, the Governor was escorted to the State Building, and remained to await the reception of guests at two o'clock. During this time the doors were closed to the general public, although a few invited guests were admitted. From one to two o'clock the doors remained partially closed except to visitors from a distance anxious to pass directly through the building. During this waiting hour the crowds continued to increase, until, as far as the eye could reach, nothing could be seen but one surging mass of humanity.

A few minutes after two o'clock the Veteran Corps of the First Regiment, which had acted as the Governor's escort during the day, marched up the avenue, preceded by Company D of the First Regiment, and headed by Beck's Band. Entering the building they cleared a passage way for the Governor and his staff, who proceeded at once to the Governor's reception room, where a large number of guests had congregated, prominent among them being Mayor Stokley, of Philadelphia, Lieut. Governor Latta, Mayor Latrobe, of Baltimore, Governor Carroll, of Maryland, and others.

The reception was then formally opened by Mrs. Hutter, President of the Board of Managers of the Soldiers' Orphan Home, and Professor Wickersham, Superintendent of Public Instruction. The Commission arrived soon afterwards and proceeded to the private reception room, where they were received by the Governor. While this preliminary reception was in progress, 150 boys and 100 girls of the soldiers' orphans of the Northern Home—the boys carrying a banner, inscribed: "We represent eighty regiments," and 150 boys of the Lincoln Institute, had arrived under the escort of Post 2, Grand Army Republic. When in the presence of the Governor the young visitors presented his Excellency with a handsome bouquet of flowers. The presentation was made by the Colonel, Master Howard Adams, as follows: "Governor Hartranft: On behalf of my comrades, the Soldiers' Orphans of the Northern Home, I present to you this floral tribute. It is a testimonial of our respect to you as Governor of Pennsylvania, and of our gratitude to you as the friend of the soldiers' orphans." The Governor, in reply, said that it was a source of the greatest satisfaction to those who had borne an active part in the war to feel that, through the liberality and wisdom of the people of Pennsylvania, its Government had been enabled to inaugurate and carry on a scheme of such noble benevolence as the soldiers' orphan schools. Pennsylvania may well be proud of her distinction in this work, in which she has surpassed every other State, and it is a work which will be remembered with increasing pride in the time to come. The Governor then referred to his own pleasant associations in the past, with the orphan children of the schools represented at the reception, and expressed his cordial wish that the training they had received as wards of the State would fittingly prepare them for the great battle of life. The boys then filed passed the Governor, saluting him in turn, and were followed by the girls of the Institute.

Post No. 2, Grand Army of the Republic, came next, and passed the Executive in single file. The police then formed a line across the front to allow the entrance of the Select and Common Councils of Philadelphia. Nearly every member of the body had a few words of greeting for the Governor, and considerable time was taken up by their passage.

Company D, First Regiment, N. G. Pa., next filed by, and then the crowd were permitted to enter.

At four o'clock the Grand Encampment of Odd Fellows, numbering some thirty gentlemen, passed through the Hall, and were warmly welcomed by his Excellency.

At five o'clock the reception ended, and the Governor and his staff, escorted by a squad of Centennial Guards, proceeded to the reception at the Municipal Building, the First Brigade Band heading the procession.

It was estimated by gentlemen in attendance that during the first hour of the reception in the State Building 3,000 guests were received, and that during the intervening time 12,400 participated in the formality, making altogether over 15,000. About 30,000 people passed through the building during the day.

At three o'clock Mayor Stokley held a reception at the Municipal Building, which was also largely attended. Among those present were included, with perhaps a few exceptions, all the officials of the city government, a large representation from the State offices, besides many old and well known citizens. The Presidents of the City Councils assisted Mayor Stokely in receiving the visitors.

At three o'clock Mrs. Gillespie and other ladies of the Women's Centennial Executive Committee held a reception at Judges' Hall. There was nothing formal about it. The visitors being introduced passed on, and forming friendly groups, chatted pleasantly on the events of the day. There were no formal speeches, and Theodore Thomas' admirable band furnished the music on the occasion.

In the evening the grounds were brilliantly lighted up with artificial fires, and the grandest display of fire works ever seen in America was witnessed by fully 200,000 people. The display was made on George's Hill, within the grounds, and the fire works furnished by Messrs. Brook & Co., of London. It was not till long after midnight that the last car left the grounds, crowded with sight-seers.

LIST OF AWARDS BY THE UNITED STATES CENTENNIAL COMMISSIONERS TO THE STATE OF PENNSYLVANIA AND HER EXHIBITORS.

GROUP I.—MINERALS, MINING, METALLURGY AND MACHINERY.

State of Pennsylvania, Bituminous Coals.
State of Pennsylvania, Semi-Bituminous Coals.
State of Pennsylvania, Anthracite Coals.
Geological Survey of Pennsylvania, Geological Collection, etc.
Huntingdon and Broad Top Coal and Iron Region of Pennsylvania, Coals, Coke, Iron Ores, &c.
Lehigh Valley Region, Pig Iron.
Wyoming Historical Geological Society, Wilkesbarre, Fossils from the Anthracite Coal Measures of Wyoming Valley.
Columbian Slate Company, Slatington, Roofing Slate.
Alexander Fangueux, Philadelphia, Millstones.
C. J. Dunn, Philadelphia, Geological Map.
W. W. Jefferis, West Chester, Minerals.
James C. Hand & Co., Philadelphia, Corundum Grains and Flour.
J. Koenigsburg, Huntingdon, Coke Oven.
Lehigh Slate Company, Slatington, Roofing and School Slates, &c.
H. Bradford, Philadelphia, Coal and Ore Separator.
Dickson Manufacturing Company, Scranton, Cornish Pumps and Hoisting Engines for mining purposes.
Isaac W. Forbes, Philadelphia, Automatic Steam Quartz Battery. (Stamping Mill.)
Diamond Stone Cutting Machine Company, Philadelphia, Stone Cutting Machines.
Duncannon Iron Company, Philadelphia, Nail Cutting Machine and its Products.
The Pennsylvania Diamond Drill Company, Pottsville, Diamond Drill.
W. Weaver, Phœnixville, Hand Rock Drill. (The Victor Rock Drill. A. S. 55.)
Robert Hare Powell & Co., Philadelphia, Iron Ore, Coals, Coke, etc.
Stoner, Hitchmann & Co., Mt. Pleasant, Coke.
A. M. Hutchinson & Bro., Pittsburgh, Coke.
Taws & Hartman, Philadelphia, Blast Furnace Apparatus.
Hussey & Co., Pittsburgh, Copper, Brass, etc.
Hussey, Wells & Co., Pittsburgh, Crucible Steel Plates and Bars.
Jones & Loughlin, Pittsburgh, Cold Rolled Wrought Iron Shafting.
The Lackawanna Iron and Coal Company, Scranton, Bessemer Pig Iron and Wrought Iron Bars.
The Cambria Iron Co., Johnstown, Raw Materials for the Iron Manufacture and Iron and Bessemer Steel Bars and Rails.
Reese, Graff & Woods, Pittsburg, Wrought Iron and Steel Bars, and Horseshoes.
Phospher-Bronze Smelting Works, Philadelphia, Phospher-Bronze.
Caldwell & Mather, Philadelphia, Improved Wind Furnace.
Weimar Machine Works, Lebanon, Blowing Engine and other Blast Furnace Machinery.
Henry Auer, Philadelphia, Silver Leaf.
Tatham & Bro., Philadelphia and New York, Sheet Lead and Tin-lined Lead and Iron Pipes.
J. E. Mitchell, Philadelphia, Grindstones and Fixtures.

Pennsylvania Marble Company, Philadelphia, Black Marble from Lycoming county, Pa.

Theo. D. Rand, Philadelphia, Minerals.

Schuylkill Copper Works, (C. M. Wheatley,) Phœnixville, Copper and Copper Ores.

Philadelphia Galvanizing Company, Philadelphia, Galvanized Sheet Iron.

Phœnix Iron Company, Philadelphia, Rolled Iron Beams and Shapes.

Penn Galvanic Works, Philadelphia, Galvanized Sheet Iron.

M'Cullough Iron Company, Philadelphia, Galvanized Sheet Iron.

Marshall Bros. & Co., Philadelphia, Sheet and Bar Iron and Galvanized Iron.

M. M. Manly & Son, Rolled Iron Hand Rail.

Wilbraham Bros., Philadelphia, Bakers' Pressure Blower.

J. E. Straus & Co., Philadelphia, Galvanized Sheet Iron.

George K. Tyson, Philadelphia, Phosphor Bronze.

Pennsylvania Steel Company, Philadelphia, objects of Steel and Steel Ingots.

Wilson, Walker & Co., Pittsburg, Wrought Iron and Forgings.

N. and G. Taylor & Co., Philadelphia, Tin Plate.

Lehigh Zinc Company, Bethlehem, Ores, Spelter, Sheet Zinc and Zinc Oxide.

Wm. Clark & Co., Pittsburg, Hoop Iron.

Chemical Copper Company, Phœnixville, Copper Ores and Products.

E. R. Beadle, Minerals.

Hastings & Co., Philadelphia, Gold Leaf and Dental Foil.

Horace A. Beale, Parkersburg, Wrought Iron Plates and Puddled Bars.

Joseph Wilcox, Philadelphia, Minerals.

J. S. Waterman, Philadelphia, Silver Lead.

Valentines & Co., Bellefonte, Pig and Wrought Iron.

Struthers & Son, Philadelphia, Wrought Marbles and Granites.

Pottstown Iron Company, Pottstown, Wrought Iron Plates and Bars.

Philadelphia and Reading Railroad Company's Rolling Mill, Reading, Iron Rails and Rail Piles.

W. A. H. Schreiber, Philadelphia, Clay, Kaolin, Flint, Spar and Sand for Potters.

Singer, Nimick & Co., Pittsburgh, Martin and Crucible Steel Plates and Bars.

Lehigh Whetstone Company, Allentown, Whetstones.

B. Kreischer & Son, Philadelphia, Fine Clay and other Clays.

E. & G. Brooke, Birdsboro', Wrought Iron.

H. Bradford, Philadelphia, Quartz Rock.

American Kaolin Company, New Garden, Kaolin, Clays and Sand.

J. H. Brinton, Thornburg, Block and Vases of Serpentine from Brandywine, Pa.

Moorhead & Co., Pittsburgh, Sheet Iron and Galvanized Iron.

Pennsylvania Lead Company, Refined Lead.

Chapman Slate Company, Bethlehem, Slate.

John M. Cochran & Co., Broadford and Uniontown, Connellsville Coke.

Loiseau Pressed Fuel Company, Philadelphia, Compressed Fuel.

Pottstown Iron Company, Pottstown, J. C. Gould's Nail-Feeding Machine.

Henry Disston & Son, Philadelphia, Cast Steel Ingots, Blooms and Plates.

Pennsylvania Tack Works, Norristown, Machines for making Tacks.

Union Iron Mills, Pittsburgh, Rolled Iron Shapes.

Alan Wood & Co., Philadelphia, Planished Sheet Iron.

W. D. Wood & Co., Pittsburgh, Planished Sheet Iron.

William Wiler, Philadelphia, Brass.

Philadelphia Iron and Steel Company, Philadelphia, Rolled Iron Shapes.

Phillips, Nimick & Co., Pittsburgh, Wrought Iron Bars and Boiler Plates.

John Roach & Son, Chester, Iron Boiler Plates and Forgings of large dimensions.

James Rowland & Co., Philadelphia, Wrought and Steel Sheets and Bars.

Stewart & Co., Easton, Wire.

The Edgar Thompson Steel Company, (Limited,) Pittsburgh, Bessemer Steel Ingots, Rails and Forgings.

The Midvale Steel Works, Tubes, Bars, Forgings and Castings of Crucible and Siemens Martin Steel.

Miller, Metcalf & Parkins, Pittsburgh, Crucible Steel for Tools.

J. P. Morris & Co., Philadelphia, Blowing Engine for Blast Furnace.

Park Bro. & Co., Pittsburgh, Crucible Steel Boiler Plate and Fire-box Plate, Tool, Plough and Spring Steel.

A. Garrison & Co., Pittsburgh, Chilled Rolls.

A. G. Harris, Johnstown, Brick Bottoms and Tuyeres for Bessemer Converters.

Catasauqua Manufacturing Company, Catasauqua, Wrought Iron Bars.

American Galvanizing Works, Galvanized Sheet Iron.

Allentown Rolling Mill Company, Allentown, Wrought Iron Bars.

Potts Brothers, Pottstown, Boiler Plate.

A. E. Foote, Philadelphia, Collection of Minerals.

GROUP II —POTTERY, GLASS, ARTIFICIAL STONE, ETC.

James T. Allen, Philadelphia, Scajliola and Marezzo, Artificial Marble, Columns, Pedestals, Pilasters, Mantels, Wainscoting, etc.

Wilson Mitchell, Philadelphia, Compressed Paving Tiles of various Colors.

D. W. Denton, Philadelphia, Artificial Slate Roofing applied warm in a Sheet.

The Coplay Cement Company, Allentown, Coplay's Hydraulic Cement, Anchor Cement and Artificial Stone.

P. P. Quackenboss, Philadelphia, Four Large Artificial Stone Vases.

Isaac Gregg, Jr. and Co., Philadelphia, Brick Machine and one Face Brick pressed edgewise.

The Allen Cement Company, Siegfried's Bridge, Natural Hydraulic Cement.

Phœnix Stone Manufacturing Company, Philadelphia, Artificial Stone Flagging and Building Blocks.

J. E. Jeffords & Co., Philadelphia, Brown Rockingham and Yellow Earthen Wares.

American Kaolin Company, Philadelphia, Fire Bricks.

Whitall, Tatum & Co., Philadelphia, Chemists', Druggists' and Perfumers' Wares of Lime and Green Glass.

P. W. Sanger & Co., Philadelphia, Pressed Bricks.

Straw, Wile & Co., Philadelphia, Black Lead Crucibles and Stove Polish.

Michael Ehret, Jr., Philadelphia, Granulated Slag Roofing.

Galloway & Graff, Philadelphia, Artistic Terra Cotta.

Harvey & Adamson, Philadelphia, Terra Cotta Glazed Drain and Sewer Pipe.

Richard C. Remmey, Philadelphia, Chemical Stoneware.

Gillinder & Sons, Philadelphia, Flint and Lime Glass.

Hartell & Letchworth, Philadelphia, Cut and Etched Lamp Globes.

Robert Taylor & Co., Philadelphia, Black Lead Crucibles and large Retorts for distilling Zinc.

Philip Newkumet, Philadelphia, and Perth, Amboy, New Jersey, Clay Retorts for Gas Works, Fire Brick for Gas Works, Blast Furnaces, etc.

Kier Bros., Salina, Fire Brick, Furnace Bricks, Arches and Keys.

Wm. L. Gregg, Philadelphia, Gregg's Triple Pressure Brick Machine.

Excelsior Brick and Stone Company, Philadelphia, Excelsior Brick Machine.

Wampum Cement and Lime Company, (limited,) New Castle, Portland Cement and Artificial Stone made from same.

Augustus Morand, Philadelphia, Plastic Brick Machine and Kiln for Burning by successive chambers.

S. Williams & Son, Philadelphia, Brick Presses.

F. L. & D. R. Carnell, Philadelphia, Brick Presses of various sizes.

S. P. Miller & Son, Philadelphia, Hand Presses for Re-pressing Bricks and Fire Bricks.

Cedar Hollow Lime Company, Philadelphia, Lime, Model of Lime Kiln and Model of House for Storage of Lime and of Car for Transporting it.

The Brick Enameling Company, Philadelphia, Enameled Brick, in a variety of colors.

M. Chambers, Philadelphia, Brick-making Machine,—operates by expressing the clay.

George Carnell, Philadelphia, Clay Tempering Mill.

A. J. Haws, Johnstown, Fire Bottom for Bessemer Steel Converters, Fire Clay Tuyeres, Patent Nozzles and Sluices for Ladle Rods, and Furnace Brick.

J. M. Albertson & Sons, Norristown, Glass Shades.

Rochester Tumbler Company, Pittsburg, Glass Tumblers.

George Duncan & Sons, Pittsburg, Lime Glass Table Wares.

O'Hara Glass Company, (limited,) Pittsburg, Lime Glass Table Wares, &c.

Bakewell, Pears & Co., Pittsburg, Moulded Glass Table Wares, &c.

Keystone Flint Glass Company, Pittsburg, Pure Lead Glass Oil Finished Lamp Chimneys.

Excelsior Flint Company, Pittsburg, Lamp Chimneys and Reflectors.

H. C. Fox & Sons, Philadelphia, Druggists' and Perfumers' Glass Wares, made from lime glass.

M'Elroy & Co., Philadelphia, White Clay Tobacco Pipes.

Atterbury & Co., Pittsburg, Lime Glass Lamps, Lamp Chimneys and Globes.

Bevington & Winters, Philadelphia, Furnace for Decorating China or Glass.

Cohansey Glass Company, Philadelphia and Bridgeton, N. J., Window Glass, Fruit Jars, &c.

GROUP III.—CHEMISTRY AND PHARMACY, WITH THE APPARATUS.

Bullock & Crenshaw, Philadelphia, Sugar-coated Pills.

Hance Bros. & White, Philadelphia, Fluids and Solid Extracts, Elixirs, &c.

J. Newton Peirce, Philadelphia, Stone Surface Enamel.

Harrison Bros. & Co., Philadelphia, Litharge, Acids, White Lead, Sylvan Green and Paints.

Crew, Moore & Levick, Philadelphia, Illuminating and Lubricating Oils.

Galena Oil Works, (limited,) Franklin, Lubricating and Burning Oils from Petroleum.

Chas. K. Smith, Philadelphia, Whale and Mineral Oils.

N. W. Harkness, Philadelphia, Refined Petroleum.

Aladdin Lubricating Oil Works, Pittsburg, Petroleum Products.

E. F. Houghton & Co., Philadelphia, Lubricating Oils from Petroleum.

W. King, Son & Co., Philadelphia, Petroleum Oils.

C. R. Taylor & Co., Philadelphia, Soaps, Pomades and Perfumes.

Jos. S. C. Rowland, M. D., Philadelphia, Canceling Ink and Canceling Ink Pads.

Eastman & Brook, Philadelphia, Dressing for Ladies Shoes.

The United States Fertilizing and Chemical Company, Philadelphia, Superphosphates of Fossil Bones, Compound Fertilizers, Salt for Fertilizing, Phosphoric Acid.

Franco-American Blacking Company, Philadelphia, Blacking.

C. J. Fell & Bro., Agents for George Nelson, London, Philadelphia, Gelatine.
Farmers' Bone and Fertilizing Company, Philadelphia, Fertilizers.
M. H. Boyé & G. F. Lewis, Philadelphia, Cottonseed Oil, Manufactured and Refined.
H. Geilfus, Philadelphia, Confectionery.
Felton, Ran & Sibley, Philadelphia, Varnishes.
John Annear, Philadelphia, Blacking.
Chas. C. Phillips, Philadelphia, Varnishes and Japan.
Pennsylvania Salt Manufacturing Company, Philadelphia, Kryolite Products, Alum and Alum Soda.
Morris, Tasker & Co., Philadelphia, Gas Works Machinery.
Improved Steiner Gas Machine Company, Philadelphia, Portable Gas Machine.
American Fusee Company, (limited,) Erie, Safety Matches, Fusees, etc.
H. A. Bartlett & Co., Philadelphia, Blacking.
Wm. F. Simes & Sons, Philadelphia, Sublimed and Compressed Camphor.
Henry Fetlow & Bro., Philadelphia, Fine Toilet Preparations, Soaps, Perfumeries, &c.
J. S. Thomson, Erie, Non-erasable Inks and others.
John W. Tulley, Philadelphia, Fillers for Iron and Wood.
Warden & Oxnard, Pittsburg, Refined Petroleum.
Wetherell & Bro., Philadelphia, Lead Colors.
Stephen F. Whitman & Son, Philadelphia, Confectionery.
Wiltbank & Scattergood, Philadelphia, Confectionery.
R. & G. A. Wright, Philadelphia, Toilet Soaps, Pomades, &c.
Zindgraf & Hohenadel, Philadelphia, Paint Mill and Mixer combined.
Baugh & Sons, Philadelphia, Chemical Fertilizer and Raw Material for the same.
Henry Bower, Philadelphia, Chemicals.
J. G. Dobbins, Philadelphia, Electric Soap.
Harrison Bros. & Co., Philadelphia, Chemicals.
Philadelphia Quartz Company, Philadelphia, Silicates.
Powers & Weightman, Philadelphia, Chemicals.
Ch. Lennig, (Tacony Chemical Works,) Philadelphia, Chemicals.
Krider, Campbell & Co., Philadelphia, Paint Mill.
Kurlbaum & Co., Philadelphia, Camphor and Chemicals.
F. Laurent, Philadelphia, Confectionery.
John T. Lewis & Bros., Philadelphia, Paints, Oils and Acids.
John Lucus & Co., Philadelphia, Colors and Paints.
Malcolm & Stephenson, Philadelphia, Flavoring Extracts.
L. Martin & Co., Philadelphia, Lamp Black.
James S. Mason & Co., Philadelphia, Blacking.
M'Keone, Van Haagen & Co., Philadelphia, Soaps.
Thomas Mills & Bro., Philadelphia, Confectioners' Machine Tools.
George W. Middleton & Co., Philadelphia, Alcohol.
George Miller & Sons, Philadelphia, Confectionery.
G. Byrn Morse, Philadelphia, Confectionery.
Dudley L. Page, Philadelphia, Confectionery.
Phillips & Jacobs, Philadelphia, Fine Silver and Gold.
John Raynald, Philadelphia, Inks.
J. J. Richardson & Co., Philadelphia, Bon-bons, etc., of Sugar.
Robinson & Pratt, Philadelphia, Printing Inks.
Rosengarten & Sons, Philadelphia, Chemicals.
John M. Sharpless & Co., Philadelphia, Extracts of Logwood.
Bihn & Co., Bridesburg, Philadelphia, Lamp Black.
Joaquina Bishop, Sugartown, Chester county, Platinum Ware.

J. P. Anderson, Philadelphia, Confectioners' Machine Fork.
Browning Bros., Philadelphia, Acids, Extracts, Sugar of Lead, etc.
J. R. Chimers, Philadelphia, Albumenized Paper.
Continental Manufacturing Company, Philadelphia, Inks, Mucilage.
Wm. Conway, Philadelphia, Soap.
George S. Coyne, Philadelphia, Dyewoods, Acids, Chemicals, etc.
Croft, Wilbur & Co., Philadelphia, Confectionery.
E. M. Dexter & Co., Philadelphia, Confectionery.
William Dreydopple, Philadelphia, Soap.
Harry Irwin & Co., Bethlehem, Mineral Paints.
George J. Faller, Philadelphia, Sewing Machine Oil.
Arthur Fricke, Philadelphia, Perfumery.
Mrs. John Gardner, Philadelphia, Confectionery Machinery.
Jos. E. Hover & Co., Philadelphia, Inks.
Robert Hutter, Philadelphia, Starch, Sugar and Glucose.
Chas. Enue Johnson & Co., Philadelphia, Printing Inks.

GROUP IV.—ANIMAL AND VEGETABLE PRODUCTS—MACHINERY.

Henry C. Blair & Sons, Philadelphia, Prepared Wheat, Food for Pharmaceutical Purposes.
Heaton & Denkla, Philadelphia, Medicinal Food.
George Boyd, Philadelphia, Aroma Coffee Roaster.
George Boyd, Philadelphia, Aroma Coffee Cooler.
Ralph & Co., Philadelphia, Scotch Snuff.
C. J. Fell & Bros., Philadelphia, Mustard.
Eastburn Reeder, New Hope, Butter.
Palmer Baking Powder Company, Philadelphia, Jones' Unrivalled Baking Powder.
E. Mackridge & Co., Philadelphia, Azumea, (a Baking Powder.)
Wm. Barnett, Philadelphia, Starch.
Lagomarsino & Cuneo, Philadelphia, Macaroni, Vermicello and Fancy Pastes.
Lagomarsino & Cuneo, Philadelphia, Farina.
Bæder, Adamson & Co., Philadelphia, Glue.
Theo. Bergner, Philadelphia, Malt.
John Annear, & Co., Philadelphia, Pennsylvania Sauce.
A. A. Smyth, Philadelphia, Table Sauce.
C. B. Rogers, Philadelphia, Rye.
Frishmuth Bro. & Co., Philadelphia, Fine-Cut, Chewing and Smoking Tobacco.
Lorver, Cook & Co., Philadelphia, Rehandled Leaf Tobacco.
T. J. Dunn & Co., Philadelphia, Cigars.
Gumpert Bros., Philadelphia, Cigars.
Warner, Rhodes & Co., N. J. Packing Company, Philadelphia, Preserved Extracts
Joshua Wright, Philadelphia, Mince Meat.
Atmore & Sons, Philadelphia, Mince Meat.
Githens & Rexamer, Philadelphia, Preserved Fruits.
Warner, Rhodes & Co., Philadelphia, Preserved Fruits.
P. J. Ritter, Philadelphia, Preserved Fruits.
Bergner & Engle, Philadelphia, Lager Beer.
Geo. W. Middleton & Co., Philadelphia, Rectified Spirits.
Hannis Distilling Company, Philadelphia, Rye Whiskey.
Wm. Massey & Co., Philadelphia, Ale
Gardner & Son, Philadelphia, Porter.
F. Lauer, Reading, Lager Beer.

Wm. Massey & Co., Philadelphia, Bottled Porter.

Bergner & Engle, Philadelphia, Bottled Lager Beer.

Robert Smith, Philadelphia, Bottled Ale.

Commercial Exchange Association, Philadelphia, Cereals, Flour, Meal, Seeds, and Products of Corn, Wheat and Rye.

Stephen F. Whitman & Son, Philadelphia, Chocolate and Cocoa Pastes.

Wm. Massey & Co., Philadelphia, American Stock Ale and Porter.

A. F. Brecht, Philadelphia, Wine.

Theo. Bergner, Philadelphia, Improved Malt Kiln with Wire Floor and Mechanical Malt Turner.

P. O. Cain & Co., Philadelphia, Cigar Moulds.

Weikel & Smith, Philadelphia, Spices.

C. J. Fell & Co., Philadelphia, Spices.

Stephen F. Whitman & Son, Philadelphia, Chocolate.

David Landreth & Sons, Philadelphia, Grains, Cereals, etc.

Githens & Rexamer, Philadelphia, Preserved Vegetables.

W. H. Slocomb & Bros., Philadelphia, Preserved Tomatoes.

Warner, Rhodes & Co., Philadelphia, Preserved Vegetables.

W. P. Evans, Paoli, Flour from Winter Wheat.

C. J. Fell & Bro., Philadelphia, Self-Raising Flour.

Rankin Manufacturing Company, Pittsburgh, Three Meat Choppers—Power and Hand Sizes.

August Nittinger, Jr., Philadelphia, a Collection of Butcher's Tools, Meat Choppers, etc.

E. V. Machette, Philadelphia, Self-Raising Flour.

John Hartman, Philadelphia, Bread for Marine and Army Use.

David Carrick & Co., Philadelphia, Biscuits, Cakes and Crackers for Family Use.

Walter G. Wilson & Co., Philadelphia, Plain and Fancy Crackers, Cakes and Biscuits.

Wm. B. Burk & Co., Philadelphia, American Sponges from the Florida Coast.

M. Legenne, Philadelphia, Cigarette Paper.

Francis Worth, Marshalltown, Butter in pound prints.

Marshall, Stroud & Son, West Chester, Butter in pound prints.

G. Holman, Conneautville, Factory Cheese.

Mr. Cole, Venango, Factory Cheese.

G. J. Burkhardt & Co., Philadelphia, Stove Vats, Mash Tubs and Tuns.

Theo. Bergner, Philadelphia, Improved Racking Valve, etc.

Geo. C. Naphey & Sons, Philadelphia, Refined Lard.

John Wyeth & Bros., Philadelphia, Papona, (prepared wheat.)

GROUP V.—FISH AND FISH PRODUCTS—APPARATUS OF FISHING.

John Krider, Philadelphia, Split Bamboo Rods.

C. Fox, Philadelphia, Trout Fly Rod.

A. B. Shipley & Sons, Philadelphia, Artificial Flies, Rods, Reels, etc.

Thaddeus Norris, Philadelphia, Fishing Rods.

J. G. Brewer, Muncy, Fish Ways.

F. C. Kiergaard, Philadelphia, Fish Scale Jewelry.

W. H. Young, Philadelphia, Trolling Spoons.

GROUP VI.—TIMBER, WORKED LUMBER, PARTS OF BUILDINGS.

A. Wilt & Son, Philadelphia, Doors, Sashes and Blinds.

E. S. Morris & Co., Philadelphia, Camwood for dyes from Liberia.

Robert Buist, Philadelphia, Garden Seeds.
Davis, Wise & Co., Philadelphia, North Carolina Shingles.
Thomas Meehan, Germantown, Philadelphia, Seeds of American Trees and Shrubs.
Geo. J. Burkhardt & Co., Philadelphia, Cedar Tubs, Tanks and Dye Tubs.
Anchor Manufacturing Company, Philadelphia, Barrels and Materials for making Barrels.
Wilson & Miller, Philadelphia, Plain Marbleized Slate Work.
The Williams Marble and Slate Manufacturing Company, Philadelphia, Marbleized Slate Mantels.
J. E. Patterson & Co., Pittston, Doors, Sash, Blinds and Newels.
Wm. B. Burk & Co., Conestoga Cork Works, Philadelphia, Corks.

GROUP VII.—FURNITURE, UPHOLSTERY, WOODEN WARE.

C. Fraser, Philadelphia, Gilt Tables, Mirror and Picture Frames.
J. C. Anderson, Pittsburg, Sash Balance.
American Machine Company, Philadelphia, Wringing Machines, Fluting Machine.
Samuel James, Philadelphia, Rotary Color Stand for Artists.
E. Clinton & Co., Philadelphia, Brushes.
Keystone School and Church Furniture Company, Philadelphia, School and Church Furniture.
Hale, Kilburn & Co., Philadelphia, House Furniture.
John W. Boughton, Philadelphia, Parquetry Flooring, etc.
Francis H. Good, Philadelphia, Steam Washing Boiler for Washing Clothing, etc.
M. A. Caldwell, North-East, Erie county, Washing Machine and Wringer combined.
Hermann J. Goth, Bethlehem, Oil-painted Wall Paper and Decorations.
Baeder, Adamson & Co., Philadelphia, Curled Hair.
Schuyler, Armstrong & Co., Philadelphia, Burial Caskets, Robes, also Corpse Preservers.
Frederick Boland, Philadelphia, Looking Glasses, Picture Frames and Bouquet Tables.
J. W. Pratt, Philadelphia, Washing Machines.
John Guendling, Philadelphia, Barber Chair and Foot-rest combined.
York Manufacturing Company, York, Washing Machine.
Isaiah D. Buck, Bridesburg, Philadelphia, Washing Machine.
Lloyd Bros., Philadelphia, Ventilating Window Shade Fixtures.
Blackemore & Sherman, Philadelphia, Plumbing.
Edwin Linderback, Philadelphia, Improved Rustic Window Shades.
Edwin S. Johnson, Philadelphia, Window Shade Roller, etc.
Martin Kohler, Philadelphia, Tailor's Chair.
G. C. Newman, Philadelphia, Lacquer Moulding for Picture Frames.
Adjustable Folding Chair Company, Philadelphia, Adjustable Folding Chairs.
Mrs. Elizabeth Stiles, Philadelphia, Combination Desk.
James S. Earle & Sons, Philadelphia, Window Frames, Window Cornice, etc.
Gottlieb Vollmer, Philadelphia, Chamber Furniture.
Reeves & Eastburn, Philadelphia, Adjustable Sleeping Apartment Sofa Bed.
Charles Buschor, Philadelphia, Show Cases.
Fowler Fly Fan Company, Philadelphia, Fly Fan.
John G. Salter, Philadelphia, Mantel Mirrors, Bouquet Tables, etc.
J. Chandler Roach, Philadelphia, Patent Bedstead.
A. C. Lowe, Philadelphia, Looking Glasses, Bouquet Tables, etc.
Henry C. Hover, Philadelphia, Magic Folding Lounge, Sofa and Bed.
Eldridge J. Smith, Philadelphia, Bill Holder.

Geo. C. Renkauff, Philadelphia, Mantlepiece, Mirrors and Picture Frames.
A. Ledig & Son, Philadelphia, Octagonal Show Case.
Daniel M. Karcher's Sons, Philadelphia, Dining-Room Sideboard.
Jas. W. Cooper & Bro., Philadelphia, Brackets, Wall Pockets, Music Portfolios, Cabinets, etc.
Heiligman & Bros., Philadelphia, Carved Bureau Handles and Cabinet.
Leopold Hernberger, Philadelphia, Ironing and Starching.
Kaisor & Herzog, Philadelphia, Parlor Decorations.
Chas. W. O'Hara, Philadelphia, Hygienic Chair.
Carrington, De Zouche & Co., Philadelphia, Interior Decorations.
Daniel Pabst, Philadelphia, Furniture, a Large Walnut Sideboard.
Geo. Knell & Son, Philadelphia, Parlor Sofa Bed and other Furniture.
J. S. Lash & Co., Philadelphia, Washing Machine.
Marion Blind Company, Brady, Inside Slab Window Blinds.
Allen & Bro., Philadelphia, Furniture and Parlor Doors.
Moore, York & Howell, Philadelphia, Walnut Parlor Suit, Centre Table and Card Table.
Henry Pottin, Philadelphia, Parlor Billiard Table, etc.
Smith & Campion, Philadelphia, four complete sets of furniture, viz: Parlor, Library, Dining-Room and Chamber.
Chas. W. Clark, Philadelphia, Window Shades and Window Shade Cloth.
J. E. M'Clees & Son, Philadelphia, Mantel Mirrors, etc.
J. B. M. Fifield, Philadelphia, Bed Sofas.
Bradford & Co., Philadelphia, Sash Fastener.
Adolph Thiery, Philadelphia, Mantel and Pier Mirrors, Chairs, etc.

GROUP VIII.—COTTON, LINEN, AND OTHER FABRICS, ETC.

Andress, Hartel & Co., Philadelphia, Printed Calicoes and Shirting.
Wood, Haslam & Co., Philadelphia, Dyed Cotton Yarns and Fabrics.
Thos. Potter, Sons & Co., Philadelphia, Oil Cloths.
H. W. Butterworth & Son, Philadelphia, Drying Machines for Cotton Fabrics.
Thomas Wood, Philadelphia, Power Looms and Winding Machines.
Ben. Montgomery, Philadelphia, Raw Cotton, commercial bale.
Claghorn, Herring & Co., Philadelphia, Raw Cotton in variety.
Sellers Manufacturing Company, Philadelphia, Wire Cloth for Paper Machines.
Asbestos Patent Fibre Company, Philadelphia, Chatham Mills, Asbestos Fiber and Fabric.
Pennsylvania Wire Works, E. Darby & Son, Philadelphia, Wire Goods in Variety and Novelty.
Millville, Manufacturing Company, Philadelphia, Special Cotton Fabrics.
S. Thornton & Sons, Philadelphia, Colored Cotton Goods.
Conestoga Mills, Lancaster, Dyed Canton Flannels.
Shaffner & Stringfellow, Philadelphia, Knitting Cotton.
W. Wood & Co., Philadelphia, Cottonades and Cotton Cassimeres.
John Farnum & Co., Conestoga Steam Mills, Philadelphia, Ticking.
Millville Manufacturing Company, Philadelphia, Silesias, Window Hollands, Umbrella Cloths.
Garsed Bros., Frankford, Ticking.
David S. Brown & Co., for the Gloucester Manufacturing Co., and Ancona Printing Company, Philadelphia, Printed Cotton Fabrics.
Wm. Simpson & Sons, Philadelphia, Printed Cotton Fabrics.

Albion Print Works, Conshohocken, Dyed and Printed Cotton Fabrics.
Pretty, Grime & Co., Philadelphia, Printed and Dyed Cotton Fabrics.
A. J. Nellis & Co., Pittsburgh, Iron Tie for Baling Cotton.
R. T. White, Philadelphia, Carpet Warps.
Albion Print Works, Conshohocken, Dyeing and Printing.

GROUP IX.—WOOL AND SILK FABRICS—MACHINERY.

Philadelphia Worsted Spinner's Association, Philadelphia, Worsted Yarns.
W. H. Horstman & Sons, Philadelphia, Dress, Carriage and Upholstery Trimmings.
Aub. Hackenburg & Co., Philadelphia, Sewing Silks, Machines and Buttonhole Twist.
S. B. & M. Fleisher, Philadelphia, Braids.
Denelt & Eisenhardt, Philadelphia, Needle Loom, etc.
Wolfenden, Shore & Co., Cardington Cloth Loom.
Leedom, Shaw & Stewart, Philadelphia, Carpets.
M'Callum, Crease & Sloan, Philadelphia, Carpets.
Gibb & Co., Philadelphia, Carpets.
Conshohocken Mills, Conshohocken, Beaver and Doeskin Woolens.
J. Ledward & Son, Chester, Wool, Cotton and Doeskins.
F. Steffan & Co., Philadelphia, Shawls, etc.
Dornan Bros. & Co., Philadelphia, Power Carpet Loom.
Mrs. E. B. Shaphigh, Philadelphia, Rugs, hand made.
J. Senneff, Philadelphia, Flat Metallic Eyed Needles.
Seffarlen & Fretz, Philadelphia, Rag Carpet Yarns.
Jas. Kirkham, Chester, Cotton and Wove Doeskins.
M. A. Furbush & Sons, Philadelphia, Carding Machine.
Jas. Butterworth & Sons, Philadelphia, Rag and Waste Picker.
Jas. Smith & Co., Philadelphia, Machine and Card Clothing.
John & James Dobson, Philadelphia, Carpets, Blankets, Overcoatings.
Faxon & Wright, Philadelphia, Extract of Wool.
Henry Nosks, Philadelphia, Paper Makers' Felt.
C. W. & J. Peirce, Bristol, Felts, Crumb Cloth and Felt Skirts.
B. A. Earle, Philadelphia, Machinery.
Economy Mills, Manayunk, Cotton Warp and Wool Fur Beavers.
Monitor Mills, Philadelphia, Carpets.
Martin Landerberger's Sons, Philadelphia, Dress Goods and Shawls.
John Bromley & Sons, Philadelphia, Carpets.
Ivins, Dietz & Magee, Philadelphia, Carpets.
Shaffner & Stringfellow, Philadelphia, Germantown Wool.
Midnight Yarn Company, Philadelphia, Germantown Wool and Woolen Knitting Yarns and Germantown Yarns.
Woodvale Woolen Mills, Johnstown, Fancy Cassimeres.
Werner, Itschner & Co., Philadelphia, Silk Ribbon.

GROUP X.—CLOTHING, FURS, INDIA RUBBER GOODS, ETC.

Blaylock & Co., Philadelphia, Silk Hats.
Mrs. Harriet M. Chapmann, Philadelphia, Shirt Supporting Shoulder Brace and Puff Corset.
Mrs. Thos. Weaver, Philadelphia, Pyramid of Artificial Flowers.
Coon & Van Volkenburgh, Philadelphia, Linen Collars and Cuffs.
Hush Bro., Philadelphia, Parasols and Umbrellas.

C. E. Mathias, Philadelphia, Umbrellas.
Mrs. L. Noot, Philadelphia, Ladies' and Childrens' Dresses and Caps.
Maize & Schwartz, Philadelphia, Military Clothing.
F. Schse & Son, Philadelphia, Dress Shirts.
Mrs. C. Wimpflumer, Philadelphia, Hair Ribbon.
Turner, Andrews & Co., Philadelphia, Pocket-Books and Fancy Leather Goods.
J. W. Barrett, Philadelphia, Embroidery and Braiding.
James Fallows & Co., Philadelphia, Paper and Tin Toys.
Mrs. K. Smidt, Philadelphia, Hair Work.
Lewis Fishblatt, Philadelphia, Fur Robe.
Sharpless & Sons, Philadelphia, Costumes for Ladies.
Homer, Colladay & Co., Philadelphia, Underwear for Ladies, Children and Infants' Dresses.
James Hayden, Philadelphia, Shirts and Drawers.
Henry Atkinson, Philadelphia, Buckskin Shirts and Drawers.
J. Dickson & Co., Philadelphia, Engraving on Vulcanized Rubber.
Reach & Johnson, Philadelphia, Base Ball and Sporting Goods.
J. D. Shibe, Philadelphia, Base Balls.
Birge & Berg, Philadelphia, Artificial Flowers, of various Colors and Shades.
C. F. Rumpp, Philadelphia, Fancy Leather Work.
J. A. Stambach & Co., Philadelphia, Ladies' Furs.
Blaylock & Co., Philadelphia, Hats.
Pitou Camille, Philadelphia, Trophies representing America, Europe, Asia and Africa.
Pennsylvania Industrial Home for Blind Women, Philadelphia, Knitted Goods, Bead Work and Baskets.
American Button-hole Sewing Machine Co., Philadelphia, Button-hole, Overseaming and Sewing Machine Work.
Annie E. Taylor, of Taylor & Co., Philadelphia, Knitted Goods in Silk and Worsted.
Miss Hall, Philadelphia, Embroidery for Church Purposes.
Mrs. E. B. Shipley, Philadelphia, Hand Made Rug.
Lockwood Manufacturing Co., Philadelphia, Paper Collars.
Union Benevolent Association, Philadelphia, Embroidery and Needle-work.
A. L. Wallis, Philadelphia, Ice Walker and Rubber Sandal Combined.
H. C. Jones & Co., Philadelphia, Brush Blocks.
J. Foresten Simpson, Philadelphia, Patent Trunk Fastener and Lock Combined.
Isaac Bedichimer, Philadelphia, Gold and Silver Emblems.
W. H. Horstman & Sons, Philadelphia, Regalia and Swords.
Jas. A. Haas & Co., Philadelphia, Metallic Emblems.
George P. Pilling, Philadelphia, Society Jewels.
J. H. Wilson, Philadelphia, Society Swords, Badges and Regalia.
Clarence A. Hart, Philadelphia, Painted Silk Banners and Paper Fringe.
J. S. Cummings & Co., Philadelphia, Silk Neck Wear.
W. T. Hopkins, Philadelphia, Underwear for Ladies and Children, Infants' Dresses.
A. W. Thomas, Philadelphia, Bustle and Skirt Elevator and Bosom Form.
Wanamaker & Brown, Philadelphia, Civil and Military Clothing.
E. O. Thompson, Philadelphia, Clothing.
Conrad Bros., Philadelphia, Shirts, Collars and Cuffs.
John Wanamaker & Co., Philadelphia, Civil and Military Clothing.
Mrs. Elmira Cornwell, Philadelphia, Graduated Chart for Dress Cutting.
Mrs. E. Keyser, Philadelphia, Misses' Clothing and Infants' Outfits.

Glendenning & Twitt, Philadelphia, Whips.
Emil Wald, Philadelphia, Bone Work.
W. A. Drown & Co., Philadelphia, Umbrellas and Parasols.
Henry Carlisle & Son, Philadelphia, Combs, Jewelry and Fancy Articles in Shell and Horn.
Max, Kuhn & Silberman, Philadelphia, Pipes.
H. H. Peacock, Philadelphia, Morocco, Wood and Velvet Cases.
G. F. Kobb & Son, Philadelphia, Cases for Jewelry, etc.
Charles P. Sellers, Philadelphia, Brooms, Whisks, etc.
E. Clinton & Co., Philadelphia, Brushes and Pencils.
Jeff. O. Bentley, Philadelphia, Embroidered and Stamped Goods.
Joel Thomas, Philadelphia, Ruches, Ladies' Caps, etc.
Ed. S. Mawson & Sons, Philadelphia, Sealskin Sacks, Gloves, etc.
Mrs. J. H. Martin, Philadelphia, Feather Flowers.
J. H. Fenton & Bro., Philadelphia, Hats.
Christian Nonnenberger, Philadelphia, Hatters' Blocks and Tools.
E. Morris & Co., Philadelphia, Hats.
John B. Stetson & Co., Philadelphia, Felt Hats, (fine fur.)
Henry Gabriel & Son, Allentown, Hosiery.
Thomas Hughes & Co., Bristol, Hosiery.
Henry Zanner, Philadelphia, Zephyr Goods.
G. H. Prindle, Philadelphia, Knit Goods.
J. J. Glazer & Co., Philadelphia, Hosiery.
A. B. Hapke, Harrisburg, Knit Goods.
C. A. Thudium & Son, Philadelphia, Knitted Jackets.
Martin Landenberger's Sons, Philadelphia, Knit Goods.

GROUP XI.—JEWELRY, WATCHES, SILVERWARE, BRONZES, ETC.

H. Muhr's Sons, Philadelphia, Gold Finger Rings, Solid and Filled.
P. L. Krider, Philadelphia, Solid Silver Table Ware and Hollow Ware.
C. & A. Pequignot, Philadelphia, Gold Watch Cases.
Isaac Bedichimer, Philadelphia, Gold Work.
Simmons, Updyke & Co., Philadelphia, Gold and Silver Work.
Charles Neber, Philadelphia, Hair Ornaments.

GROUP XII—LEATHER AND MANUFACTURES OF LEATHER, ETC.

Anthony Lynch, Philadelphia, Harness.
Frederick Lockwood, Philadelphia, Automatic Leather Scourer.
Pritchett, Baugh & Co., Oak Sole from Spanish Hides, from Mapleton and Bath Tanneries.
Fred. Woelfel, Allegheny City, Harness Leather.
Chas. B. Williams, Philadelphia, Oak Sole Leather from Slaughter Hides.
William B. Horn & Bro., Philadelphia, Shoemakers', Tanners' and Curriers' Tools.
Grant & Horton, Ridgeway, Hemlock Sole Leather.
J. & J. K. Greenawalt, Harrisburg, Calf and Kip Skins.
Adams & Keen, Philadelphia, Curacoa Brush Kid.
M'Neely & Co., Philadelphia, Tampico Morocco, (colored,) for Shoes.
Wentz & Clark, Philadelphia, Cape, Oil Boot, Brush Grains French Morocco.
F. Schuman & Son, Philadelphia, Calf Kid.
Wm. Amer & Co., Philadelphia, Tampico and Cape French Morocco and Pebbles.

W. Schollenberg & Sons, Philadelphia, Calf Kid, Russia Leather and Sheep Skins for Book Binders' Use.

Francis O'Callaghan, Philadelphia, Skivers Tanned and Dyed in various Colors, etc.

Spanogle & Pannebaker, Philadelphia, Oak Sole Leather from Texas Hides.

J. L. Sommerville, Bellefonte, Oak Sole Leather.

Genseman, Miller & Co., Penn Grove, Oak Sole Leather.

Daniel P. Ray, Tyrone, Union Crop Leather.

A. D. Faust & Son, Mt. Union, Oak Sole Leather.

E. T. Brown, from James Doves & Co., Pittsburgh, Union Crop Sole Leather.

Allen Gates & Bro., Philadelphia, Women's Gaiters.

Mosser & Kech, Allentown, Union Crop Leather.

Henry J. Rife, Philadelphia, Oak Sole Leather.

J. P. Wilkinson & Bro., Unionville, Oak Sole and Rough Upper Leather.

G. B. Horton & Co., Ridgway, Hemlock Sole Leather.

Keen & Coates, Philadelphia, Oak Slaughter Sole Leather.

J. & J. K. Greenawalt, Harrisburg, Oak Sole Leather.

A. & J. Groetzinger, Allegheny City, Oak Sole Leather.

J. W. & A. P. Howard & Co., Corry, Hemlock Sole Leather.

J. Barton Smith, Philadelphia, Rasps and Files for Shoemakers' use.

Leas & M'Vitty, Philadelphia, Oak Sole Leather.

A. Corbin & Co., New Milford, Hemlock Sole Leather.

Thomas R. Evans, Philadelphia, Boot and Shoe Trees and Stretchers.

James Wensley, Philadelphia, Children's Fancy and Plain Morocco and Serge Shoe Uppers.

Lawrens Ede Warren, Philadelphia, a Patent Seam for the Backs of Shoes.

Tayman Shoe Machine Company, Philadelphia, Shoe Trimming and Burnishing Machines.

Waldo M. Claffin, Philadelphia, Men's and Boys' Hand sewed and Estenbrook Screw Boots, Gaiters and High Shoes.

S. D. Soilers & Co., Philadelphia, Children's and Infants' Boots and Shoes.

West Bros., Philadelphia, Ladies', etc., Machine-sewed Boots.

Kelly & Moore, Philadelphia, Ladies' Gaiters.

Cutlan Shoe-sewing Machine Company, Philadelphia, Machine for Sewing Uppers to Soles.

J. H. Richelderfer, Philadelphia, Gents' and Ladies' Over-gaiters, Hunting Leggins.

John Targett, Philadelphia, Boot and Gaiter Patterns.

Abram Hewling, Philadelphia, Patent Ice Creeper.

J. E. Mitchell, Philadelphia, Rub, Cleaning and Scouring Stones.

Wm. Driesbach & Co., Philadelphia, Shoe Bows and Rosettes.

Simon & Redifer, Philadelphia, Men's and Women's, etc., Lasts for Shoes.

George C. Walters, Philadelphia, Machine for Sewing Wet Skins.

Meyer & Stern, Philadelphia, Shoes.

Henry Leh & Co., Allentown, Boots and Brogans.

Laird, Schober & Mitchell, Philadelphia, Shoes.

Jacob Zaun & Son, Philadelphia, Hand-made Boots and Shoes for Custom Trade.

A. R. De Haven & Son, Philadelphia, Ladies' Hand-made Custom Work, Gaiters, etc.

C. Benhert & Son, Philadelphia, Gents' Fine Custom Hand-sewed Boots, Shoes and Gaiters.

Kiefer, Stifel & Co., Allegheny, Oak Harness Leather.

Alex. Halstien, Pittsburgh, Oak Harness Leather.

Edwin Chambers, West Chester, Oak-tanned Calf Skins.

Laffe & Hax, Pittsburgh, Oak Harness Leather.
Amos Hollinger, Lancaster, Oak Harness Leather.
J. C. Lappe, Pittsburgh, Oak Harness Leather.
James Calling, Pittsburgh, Oak Harness Leather.
Frederick Braun, Philadelphia, Kip and Calf Skins, (oak-tanned.)
C. Ludy & Sons, Philadelphia, Oak-tanned Calf Skins.
J. A. Bechtel & Son, Newport, Oak Sole Leather.
W. H. Rosensteel & Son, Johnstown, Union Crop Leather.
John Bau, Mount Union, Union Crop Leather.

GROUP XIII.—PAPER, STATIONERY, PRINTING AND BOOK-MAKING.

James Grice & Sons, Downingtown, Paper Wrappers.
A. M. Collins, Son & Co., Philadelphia, Card Mounts in Various Styles, for Photographs.
C. A. Dixon & Co., Philadelphia, College Stationery.
Potsdamer & Co., Philadelphia, Commercial Lithography.
Lehman & Bolton, Philadelphia, Commercial Lithography.
J. M. Armstrong, Philadelphia, Music Typography.
Samuel Loag, Philadelphia, Samples of Fine Color Printing.
Bullock Printing Press Company, Philadelphia, Rotary Perfecting Wet Printing Press.
Jessup & Moore, Philadelphia, Paper.
Megargee Bros., Philadelphia, Paper of all kinds.
Gordon A. Dunlap, Philadelphia, Building and Manilla Felts.
Chas. J. Cohen, Philadelphia, Oiled Paper, etc.
N. M. Kerr & Co., Philadelphia, Paper Boxes and Jeweler's Findings.
Janentzky & Co., Philadelphia, Artists' Materials.
A. J. Holman & Co., Philadelphia, Book-binding of Albums and Bibles.
W. H. Hoskins, Philadelphia, Engraved Stationery.
John Dickson & Co., Philadelphia, Vulcanized Rubber Engravings.
Mackellar, Smith & Jordan, Philadelphia, Type Founding Machinery, Types and Printing Materials.
W. E. & E. D. Lockwood, Philadelphia, Automatic Envelope Machine.
Howell & Bros., Philadelphia, Hanging up Machine, Hardening Machine, Cutting off and Rolling Machine.
Ignatius Kohler, Philadelphia, Book-binding.
Moss & Co., Philadelphia, Blank Books and Book-binding.
J. B. Lippincott & Co., Philadelphia, Book-binding and Printing,
A. Reed & Co., Philadelphia, Ornamental Book-binding.
V. Grottenthaler, Philadelphia, Boxwood for Engravers' use.
Wm. F. Murphy's Sons, Philadelphia, Blank Books.
Chas. W. Packer, Philadelphia, Machine for Cutting Card-board.
Howell & Bro., Philadelphia, Decorative Paper.
Howell & Burke, Philadelphia, Decorative Paper.
Wm. Mann, Philadelphia, Copying Paper and Blank Books.
W. W. Harding & Co., Philadelphia, Book-binding, etc.
Chambers Bros., Philadelphia, Newspaper and Periodical Folder, Paster and Trimmer.
Louis Dreka, Philadelphia, Invitation Card, Stationery, etc.
Brown & Carver, Philadelphia, Paper Cutter and Rotary Card Cutter.
W. O. Hickok, Harrisburg, Paper Ruling Machines.
D. Appleton & Co., Philadelphia and New York, Book-binding.

Chas. Enue Johnson, Philadelphia, Automatic Feeder for Printing Machines.

Novelty Paper-Box Co., Philadelphia, Wire Stitching Machine for Books and Pamphlets.

Fry's Engraving Establishment, Philadelphia, Engraved Dies, Stamps and Tools.

American Baptist Society, Philadelphia, Book-binding.

Rose and Macdonald, Philadelphia, Printers' Rollers.

Gavit Paper Machine Co., Philadelphia, Paper-Making Machinery.

Porter & Coates, Philadelphia, Books.

Miller's Bible Publishing House, Philadelphia, Bibles.

R. T. Hazzard, Philadelphia, Wall Paper Decorations.

Allen, Lane and Scott & Lauderbach, Philadelphia, An Illustrated Book—"A Century After."

J. M. Stoddart & Co., Philadelphia, Books.

Lindsay and Blakiston, Philadelphia, Books.

Chas. Guie & Sons, Downingtown, Paper Wrappers.

Howlett, Onderdonk & Co., Philadelphia, Machine-Made Paper Bags.

Oldack & Mergenthaler, Philadelphia, Book-binding.

Nerman Gath, Bethlehem, Oil Painted Wall Paper.

GROUP XIV.—APPARATUS OF HEATING, LIGHTING, ETC.

Austin, Opdyke & Co., Philadelphia, Galvanized Corrugated Rain Spout.

Pennsylvania Galvanic Works, Philadelphia, Galvanized Goods of all Descriptions.

Wm. L. Gregg, Philadelphia, The Ceramic Gas Kiln.

The Keller Manufacturing Company, Harrisburg, Standard Quart Measure.

Isidor Brach, Philadelphia, Reversible Water Filter, etc.

Chas. Noble & Co., Philadelphia, Stoves, Ranges, etc.

Ethelbert Watts, Philadelphia, Combination Bath Trunk.

Enterprise Manufacturing Company of Pennsylvania, Philadelphia, Double Pointed Smoothing Iron, Sausage Stuffer and Coffee Mill.

J. Eldridge Smith, Philadelphia, Double Griddle.

Chas. G. Blatchley, Philadelphia, Horizontal Ice Cream Freezer.

Stuart, Peterson & Co., Philadelphia, Tinned and Enameled Cast Iron Hollow Ware.

Edward Wattis, Jr., Philadelphia, Wattis Patent Pocket Flask.

E. Pratt, Philadelphia, Soapstone Goods, including Stoves, Sinks, etc.

Moorehead Clay Works, Philadelphia, Drain and Sewer Pipes.

American Calcium Light Company, Philadelphia, Improved Calcium Light Apparatus.

Wm. B. Hazzard, Philadelphia, Skylight Shades.

Geo. D. Rollins, Philadelphia, Automatic Gas Burner.

C. A. Blessing, Philadelphia, Copper Bath Tubs.

Chas. H. Blessing, Philadelphia, Combination Cock for Bath Tub.

Job Bartlett & Sons, Philadelphia, Wrought Iron Warm Air Furnace.

C. W. Parker, Philadelphia, Ice Cream Freezer.

Reading Hardware Company, Reading, Apple Parer.

Job Bartlett & Sons, Philadelphia, London Kitcheners and Charcoal Boilers.

F. J. Walker, M. D., Philadelphia, Water Filter.

Peter Carrigan, Philadelphia, Plumbing, Copper Work, Bath Tubs, Food Tins, Sinks, Copper Kitchen Utensils.

Cornelius & Sons, Philadelphia, Gas Fixtures.

Wilhelm & Newman, Philadelphia, Post Lanterns, Silvered Mica Reflectors.

Safe Deposit, Boxes for Banks, Security Companies, etc.

J. Hall Rohrman & Son, Philadelphia, Groceries, Coffee, Tea and Spice Caddies and Scales.

Chas. F. Harris, Philadelphia, Adjustable Elbow for Stove or Heater.

Charles Burnham & Co., Philadelphia, Gas Cooking Stove, Reflecting Parlor Gas Stove, Gas Heating Stoves.

Cooper, Jones & Cadbury, Philadelphia, Water Closets, Compression Faucets, Pumps, Fountain Jets, Water Gauges, etc.

Thomas S. Dixon & Sons, Philadelphia, Grates, Gas Lags.

Bissel & Co., Pittsburgh, Isaac Dupps' Patent Railroad Car Heaters.

J. Reynolds & Son, Philadelphia, Shaking and Clinker-Cutting or Grinding Grate, for house-warming furnace or apparatus.

Bissell & Co., Pittsburgh, Pittsburgh Elevated Oven Cooking Range, Peerless Radiating Shaking Grate.

Johnson, Black & Co., Erie, Radiant Home Base Burning Stoves, Radiant Home Furnace.

Globe Gas-Light Company, Philadelphia, Self Gas-Making Street Lamps.

S. A. Wright, Philadelphia, Ventilator and Dust Trap.

Baker, Arnold & Co., Philadelphia, Gas Fixtures.

J. C. Bates, Philadelphia, Ventilators.

August Wilhelm, Philadelphia, Ceiling Reflector.

Dreer, Smith & Dreer, Philadelphia, Berford Gas-Sunlight Apparatus.

American Reflector Company, Philadelphia, Metallic Reflectors.

Simes & Tate, Philadelphia, The Spongio-Kaolin Water Filter.

Chalfant Manufacturing Company, Philadelphia, Mrs. Potts' Sad-Iron and Tailors Iron Polisher.

John P. Shaum, Lancaster, Copper Kettles and Copper Wear, (hand made.)

A. Hess, Philadelphia, The Model Baker.

Gem Soldering Iron Manufacturing Company, Philadelphia, Gem Soldering Casket.

Wilson Manufacturing Company, Philadelphia, Clothes Rack, Stove Pipe, Clothes Dryer, Nursery Cap.

J. Reynolds & Son, Philadelphia, Wood and Coal Furnace, and Cooking Range.

Geo. R. Baker, Germantown, Philadelphia, Combined Heating and Ventilating Flue Apparatus.

Mrs. S. P. Ball, Frankford, Self-Heating Gas Smoothing Iron.

Weaver & Pennock, Philadelphia, Marble Lavatory.

John Gravestone, Philadelphia, Refrigerator.

John Q. Birkey, Philadelphia, Gas Heaters.

Dolan & Anderson, Philadelphia, Plumbing and Gas Fitting Done in Memorial Hall.

Geo. A. Banta, Philadelphia, Large Refrigerator in Government Building.

Bradley & Co., Philadelphia, The National Oderless Excavating Apparatus.

W. H. Harrison & Bro., Philadelphia, Grates and Fireplaces.

GROUP XV.—BUILDERS' HARDWARE, TOOLS, CUTLERY, ETC.

W. C. Allison & Sons, Philadelphia, Patent Coupling for Iron Pipes, ("especially for Oil Wells.")

Pottstown Iron Co., Pottstown, Cut Nails.

W. J. Flanigan & Co., Philadelphia, Wrenches—named "Samson Wrenches."

E. Mills & Co., Philadelphia, Brace Bits, Saw Pads, Screw Drivers.

American File Co., Machine-Made Files and Hand-Cut Rasps.

Loyd, Supplee & Walton, Philadelphia, Screw and Spring Padlocks, Hollow Augers, etc.

Alex. Krum Chaar, Philadelphia, Files and Rasps.

Dewitt, Morrison & Kelley, Philadelphia, Augers, Auger Bits, Flour Tryers, etc.

D. K. Miller & Co., Philadelphia, Self-Locking Padlock.

Job T. Pugh, Philadelphia, Augers, Bits, Flour Tryers, etc.

Geo. Selson & Co., Philadelphia, Hammers, Hatchets, Hand-Saws, Coffee Mills, etc.

Yerkes & Plumb, Philadelphia, Hand-Axes, Hatchets, Cleavers and Hammers.

Klein, Logan & Co., Pittsburgh, Picks, Mattocks, Stone Hammers and Sledges.

L. Herder & Son, Philadelphia, Malleable Tailors Scissors.

Carr, Crawley & Devlin, Philadelphia, Building and Cabinet Hardware, also Castings.

Alfred J. Colton, Philadelphia, Planes.

William Rose, Bro. & Co., Philadelphia, Brick, Plastering and Moulders' Trowels.

Howard Shipley, Philadelphia, Pocket Knives.

G. W. Nock, (Penn Lock Works,) Philadelphia, Padlocks and Car locks.

J. F. Armbruster, Philadelphia, Castings made from Tin Waste.

J. B. Shannan, Philadelphia, Door and Window Trimmings, Gongs, etc.

John Booth & Son, Philadelphia, Braces and Bits, Spoke-shaves, Turnscrews, etc.

Starr Lock Works, Philadelphia, Pad and Trunk Locks, Door Springs, etc.

J. E. Straus & Co., Philadelphia, Galvanized Hods, Chains, Nails, etc.

Lewis, Oliver & Philips, Pittsburgh, Wagon Hardware, Hinges, Bolts, etc.

E. & T. Brooke, Birdsboro', Nails, Brads and Spikes.

Pennsylvania Galvanic Co., Philadelphia, Galvanized Ship Hardware, etc.

Quaker City Stencil Works, Philadelphia, Cast Letters, Signs, Badges, etc.

Henry Disston & Sons, Philadelphia, Saws, Trowels, Plumbs, Levels, Squares, Hinges, etc.

S. G. Flagg & Co., Philadelphia, Steel, Gray Iron and Malleable Castings, Pipe Fitting.

L. Sykes & Son, Philadelphia, Nuts, Bolts, Turnscrews, Washers, etc.

Enterprise Manufacturing Company, Philadelphia, Sad Irons, Coffee Mills, Tobacco Cutters, etc.

Baedea, Adamson & Co., Philadelphia, Sand Paper, Emery Paper and Emery Cloth.

Western File Forks, Beaver Falls, Files, Rasps, etc.

M'Caffry Bros., Philadelphia, Hand Cut Files and Rasps.

G. & H. Barnett, (Black Diamond Works,) Philadelphia, Hand Cut Files and Rasps.

I. H. Sternberger, Reading, Bolts, Nuts, etc.

W. C. Allison & Son, Philadelphia, Bolts, Nuts and Screws.

Hoopes & Townsend, Philadelphia, Bolts, Nuts, Screws, Rivets, etc.

Pennsylvania Tack Works, Norristown, Tacks, Shoe Nails, etc. (Copper and Iron.)

Edw. H. Knight, Philadelphia, Patent Wrench, (adjustable.)

L. H. Quint & Co., Philadelphia, Stencils, Pattern Letters, etc.

J. Watson & Son, Philadelphia, Bankers', Office and House Safes.

Farrell & Co., Philadelphia, Safe Deposit, Bankers' and Office Safes.

GROUP XVI.—MILITARY AND SPORTING ARMS—WEAPONS, ETC.

Wm. H. Horstmann & Son, Philadelphia, Swords and Regalia.

Wm. Wurfflein, Philadelphia, Saloon Rifles and Targets.

Thomas Sparks, Philadelphia, Drop and Mould Shot.

John Krider, Philadelphia, Breech Loading Guns.

GROUP XVII.—CARRIAGES, VEHICLES AND ACCESSORIES.

A. Lynch, Philadelphia, Harness.

Benezet & Co., Philadelphia, Carriage Springs.

John A. Haase, Philadelphia, Ratchet Drills and Hose Shield.
Pennsylvania Axle Works, (Advena & Heald,) Philadelphia, Wagon Axles.
Wm. & Harvey Rowland, Philadelphia, Carriage Springs and Iron in Shapes.
Frederick Seidle, Mechanicsburg, Finished Shafts and Poles.
Thomas Skelly, Philadelphia, Wrought Iron Hand Made Carriage Bolts.
Jacob Rech, Philadelphia, Milk Wagon.
T. A. Yost, Philadelphia, Children's Carriages and Velocipedes.
Hoopes Bros. & Darlington, Wester Chester, Wheels, Wheel Stock and Bent Woods.
Strahorn, Pierson & Co., Toughkenamon, Wheels and Wheel Stocks.
Philip Lebzelter, Lancaster, Shafts.
John G. Davis & Son, Philadelphia, Wheels and Wheel Stock.
Jacob A. Leippe, Lancaster, Bent Wood for Rims and Shafts.
Samuel Reynolds & Co., Pittsburgh, Saddlery Hardware, etc.
R. F. Wilson, Milton, Leather Fly Nets.
A. S. Jenks, Philadelphia, Horse Bits.
Kessler & Bros., Philadelphia, Wooden Hames.
P. M'Fadden, Philadelphia, Harness.
Weaver & Barndall, Pittsburgh, Whips.
Sallada & Pearson, Philadelphia, Whips.
Samuel R. Phillips, Philadelphia, Harness.
H. G. Haedrich & Son, Philadelphia, Harness.
John Breggs & Son, Philadelphia, Wagons.
C. Shanz & Co., Philadelphia, Express Wagon.
Wilson, Childs & Co., Philadelphia, Wagons.
Fulton, Walker & Co., Philadelphia, Express Wagons.
Chris. Kunzig, Philadelphia, Close Plated Carriage Ware.
Welsh & Lea, Philadelphia, Wrought Iron Bolts.
W. L. Wenkenbach, Philadelphia, Express Wagon.
A. M'Lear, West Chester, Carriages.
Haskell & Bros., Philadelphia, Wagons.
Joseph Beckhaus, Philadelphia, Carriages.
W. D. Rogers & Co., Philadelphia, Carriage.
Felton, Raw & Sibley, Philadelphia, Carriage Varnish.
C. C. Phillips & Co., Philadelphia, Carriage Varnish.

GROUP XVIII.—RAILWAY PLANT, ROLLING STOCK, ENGINES, ETC.

Porter, Bell & Co., Pittsburgh, Locomotive Engine.
Burnham, Parry, Williams & Co., Philadelphia, Locomotives.
Dickson Manufacturing Company, Scranton, Passenger and Mine Engines.
Philadelphia and Reading Railroad Company, Reading, Locomotives.
Pennsylvania Railroad Company, Altoona, United States Postal Car.
Westinghouse Air-brake Company, Pittsburgh, Westinghouse Automatic Air-brake.
Hamilton Steeled Wheel Company, Philadelphia, Chilled Car Wheels.
Davenport, Fairbarn & Co., Erie, Chilled Cast-iron Wheel.
Nichols, Pickering & Co., Philadelphia, Steel Springs.
M'Kee & Fuller, Catasauqua, Railroad and Mine Car Wheels.
Culmer Spring Company, Pittsburgh, Spiral Spring.
A. French & Co., Pittsburgh, Railway Elliptic Springs.
& A. Middleton & Co., Philadelphia, Godley's Improved Spiral Springs.
A. Whitney & Sons, Philadelphia, Chilled Cast-iron Wheels.
Pennsylvania Steel Company, Philadelphia, Railway Switches.

Wm. Wharton, Jr., Philadelphia, Bessemer Steel Grooved Railway Curves, etc.
Wharton Railway Switch Co., Philadelphia, Safety Switch with Unbroken Track.
Pennsylvania Railroad Company, Altoona, Railroad Track.
J. G. Brill & Co., Philadelphia, Street Cars for Horses.

GROUP XIX.—VESSELS AND APPARATUS OF TRANSPORTATION.

Thomas Shaw, Philadelphia, Boat Lowering Device.
American Dredging Company, Philadelphia, Dredging Machine.
John T. Bailey & Co., Philadelphia, American Hemp, Twine, Cords, etc.
Bradley & Co., Philadelphia, Chain Cable, Crane, Chains, etc.
Doughty & Kappella, Philadelphia, Steam Yacht.
Wm. Cramp & Sons, Philadelphia, Steamship Model and Elements of Stability.

GROUP XX.—MOTORS, HYDRAULIC AND PNEUMATIC APPARATUS.

R. D. Wood & Co., Philadelphia, Fire Hydrants, Cast Iron Pipes, Eddy Valves.
John M'Conn, Philadelphia, "Rock" Expansion Joint.
Rufus H Clark, Philadelphia, Eureka Lubricator.
John T. Shuster, Philadelphia, Felting.
William F. Wosser & Co., Allentown, Turbine Water Wheel.
Chalmers, Spence & Co., Philadelphia, Composition Boiler and Steam Pipe Covering.
Gun Powder Pile Driving Co., Philadelphia, Gun Powder Pile Driver.
Alexander Bros. Packing Co., Philadelphia, Leather Belting.
Geo. V. Cresson, Philadelphia, Pulleys, Hangers, Couplings, Wall Boxes, &c.
Geo. C. Howard, Philadelphia, Belting Gearing for Sewing Machines.
Agnometer Steam Pump Co., Philadelphia, Steam Pump.
John Charlton, Philadelphia, Clamp Coupling for Shafts with Pulleys.
W. Young, Easton, Deep Well Pumps and Standards.
Thomas J Rorer, Philadelphia, Leather Belting.
Henry P. M. Birkenbine, Philadelphia, Fire Protection Apparatus.
Stow & Burnham, Philadelphia, Flexible Shaft and Tools, and Machine Operated, &c.
C. Schanz, Philadelphia, Hook and Ladder Truck.
T. Wilbraham, Philadelphia, Pressure Blowers, Gas Exhaustors.
B. E. Lehman, Bethlehem, Gauge Cocks, Water Gauges, Oil Cups, Gate Valves.
Erie City Iron Works, Erie, Stationary and Horizontal Engines.
Frick & Co., Waynesborough, Portable Farm and Stationary Engine.
Edward Brown, Philadelphia, Pyrometers for Blast Furnaces, etc.
Harrison Boiler Works, Philadelphia, Sectional Safety Steam Boiler.
L. Sterberger, Philadelphia, Safety Screw Steam Platform Elevator.
Jarecka Manufacturing Co., Erie, Valves and Cocks.
Charles Lippincott & Co., Philadelphia, Apparatus for manufacturing and dispensing Soda Water.
Samuel Y. Greer, Philadelphia, Hose Carriage and Leather Fire Hose.
Wm. K Platt, Philadelphia, Fire Extinguisher.
Albright & Stroh, Mauch Chunk, Fire Plugs.
James Eccles, Philadelphia, Screw Power Press, Drawbridge Pivot, etc.
R. T. H. Stillman, Philadelphia, Water Gates and Fire Hydrants.
Merchant & Co., Philadelphia, Seamless Brass and Copper Tubes.
Cooper, Jones & Cadbury, Philadelphia, Brass Valves, Cocks and Pumps.
Chas. W. Ervien & Bros., Philadelphia, Horizontal and Vertical Steam Engines.
W. H. Harrison, Philadelphia, Double-acting Two Valve Pumps.

Jacob Naylor, Philadelphia, Engines, etc.
E. C. Klein, Philadelphia, Eccentric Piston Engines.
The Wm. Cramp Sons' Steam Engine Building Co., Philadelphia, Single and Compound Marine Engines.
Wissner & Strong, Pittsburgh, Steam Engines with appliances.
Evans, Dalzell & Co., Pittsburgh, Boiler, Oil Well, Artesian and Hydraulic Tubing.
S. S. Williams & Co., Philadelphia, Hod Elevator.
Gloucester Iron Works, Philadelphia, Cast Iron Pipes, Fire Hydrants, Stop Valves.
Geo. C. Howard, Philadelphia, Hoisting Machine.
I. P. Morris & Co., Philadelphia, Blast Engine.
Allison & Bannan, Port Carbon, Air-Compressing Engines.
W. Barnet Le Van, Philadelphia, Damper Regulator and Grate Bars.
Conde & Co., Philadelphia, Steam Pumping Engines.
Hydrostatic and Hydraulic Company, Philadelphia, Compound Propeller Pump for Quarries.
Shire Governor Co., Bethlehem, Governor and Motor.
J. W. Connery, Philadelphia, Concave Calking for Steam Boilers.
G. W. & H. W. Middleton, Philadelphia, Iron Tubes, Brass Cocks and Valves.
Schutte & Gehring, Philadelphia, Koerling's Patent Steam Jet.
A. B. Cook & Co., Erie, Adjustable Dead Pulleys, etc.
R. O. Moorhouse & Co., Philadelphia, Steam Engine with Gear, etc.
H. Belfeild & Co., Philadelphia, Valves, Cocks, Gauges, etc.
Erie City Iron Works, Erie, Horizontal Tubular Engine.
Morris, Tasker & Co., Philadelphia, Wrought Iron Tubes, Tools and Brass Work.
N. F. Burnham, York, Turbine.
John Birkenbine, Philadelphia, Treble Fire Hydrant.
S. S. Jamison, Saltsburg, Steam Water Injector.
Michael Hey, Philadelphia, Beer Pumps with Bar Fixtures.
Albert G. Busby, Philadelphia, Water Motor from Hydrant Pressure.
Abraham N. Wolf, Allentown, Turbine Water Wheel and Flume.
W. W. Grier, Hulton, Hydraulic Ram Sentinel.
William Sellers & Co., Philadelphia, Injector, Shafting, Couplings and Hangers.
Stokes & Parrish, Philadelphia, one Passenger Elevator of the largest capacity.
Baird & Huston, Philadelphia, Horizontal Tubular Boiler.
Jones & Laughlin, Pittsburgh, Shafting, Hangers, Pulleys, etc.
Weimar Machine Works, Lebanon, High Speed Blowing Engine.
George R. Kirk, Philadelphia, Brass Valves and Cocks.
Lonergan & M'Bride, Philadelphia, Oil Cups and Lubricators.
Pancoast & Maule, Philadelphia, Steam and Hot Water Apparatus, Radiators.
Asbestos Patent Fibre Company, Philadelphia, Packing.
Th. H. Peto, Philadelphia, Hook and Ladder Truck, Hose Carriage.
Baird & Huston, Philadelphia, Steam Engine.
W. C. Allison & Co., Philadelphia, Tubes and Pipes.
R. Wetherill, Chester, Steam Engine with Self-packing Piston.
Rogers & Black, Philadelphia, Boiler.
Wickersham & Bros., Philadelphia, Oil Cup and Feeders.
William Ruoff, Philadelphia, Double and Single Geared Jack-screws.
James Haworth, Philadelphia, Hydrant Turbine.
Hertzel Herman, Philadelphia, Speed Indicator.
Schutte & Goehring, Philadelphia, Pumps.
Neafie & Levy, Philadelphia, Steam Engines.

Jackson Richards, Philadelphia, Piston Packing.
Williamson Bros., Philadelphia, Hoisting Engine with Spur and Frictional Gearing.
R. J. Barr, Philadelphia, Steam Trap.
Canfield Manufacturing Company, Philadelphia, Packing.
George B. Brayton, Philadelphia, Hydro-Carbon Engine.
J. H. Mitchell, Philadelphia, Vertical Steam Engine.
Levi F. Smith, Philadelphia, Boiler Try Cock.
Love, Grove & Co., Philadelphia, Vertical Tubular Boilers.
Thos. Mills & Bro., Philadelphia, Vertical Engine and Ice Cream Freezer Combined.
Mathias Pennypacker, Philadelphia, Hand Hoisting Machine.
Stanley G. Flagg & Co., Philadelphia, Fittings for Gas, Steam and Water Pipes.
C. R. Patterson, Pittston, Suction and Blast Fan.
Alfred Gomersall, Philadelphia, Engines and Pumps.
John T. Shuster, Philadelphia, Felting for Boilers and Steam Pipes.
Isaac U. Forbes, Philadelphia, Steam Engine Valves and Gear.
John M'Coun, Philadelphia, Hot Water Boiler and Steam Radiator for Heating Purposes.
E. A. L. Roberts, Titusville, Steam Engine.
Knickerbocker Ice Co., Philadelphia, Ice Tools, Elevators and Ice Machinery.
Odorless Excavating Co., Philadelphia, Odorless Excavating Apparatus.
Isaac Hyneman, Philadelphia, Water Excavator.
Sluthowe & Mintzer, Philadelphia, Force and Bilge Hand Pumps, Hand Fire Engines.
R. D. Wood & Co., Philadelphia, Fire Hydrants, Cast Iron Pipes, etc.
Thomas Shaw, Philadelphia, Hydraulic Valves, Test Pumps and Gauges.

GROUP XXI —MACHINE TOOLS FOR WOOD, METAL AND STONE.

A. Weed, Philadelphia, File Cutting Machine.
Emerson Steam Stone Saw Co., Pittsburgh, Stone Sawing Machine.
Knickerbocker Ice Co., Philadelphia, Ice Tools.
Armstrong Bros & Co., Pittsburgh, Cork Cutter and Tapering Machine.
Henry Lloyd Beach, Montrose, Foot and Power Scroll Sawing Machines.
J. H. Blaisdell, Philadelphia, Wood Working Machines.
Wm. B. Burk & Co., Philadelphia, Cork Machinery.
Henry Disston & Sons, Philadelphia, Circular and other Saws.
E. & F. Gleason, Philadelphia, Wood Working Machinery.
John Gleason, Philadelphia, Spoke and Handle Turning Lathe.
Godell, Braun & Waters, Philadelphia, Wood Working Machinery.
C. Meiners & Sons, Philadelphia, Band Saw Mill.
S. R. Palmer, Philadelphia, Stave Sawing Machine.
Power, Painter & Co., Philadelphia, Wood Working Machines.
Stern Manufacturing Co., Erie, Circular Saw Mill.
Stow & Burnham, Philadelphia, Flexible Shaft for Transmitting Power.
J. H. Cooper, Philadelphia, Method for Changing Continuous Motion into Intermittent (circular.)
Cooper, Jones & Cadbury, Philadelphia, Lathes.
Geo. C. Howard, Philadelphia, Grindstone "Hacker."
Thorne, DeHaven & Co., Philadelphia Portable Drilling Machine.
J. H. Sternberg, Reading, Surface Grinding Machine.
C. A. & W. L. Teal, Philadelphia, Punching and Shearing Machines.
James Watson, Philadelphia, Gap Lathe.

C. VanHaagen & Co., Philadelphia, Drills, Drill Attachments, Drill Grinders, etc., Boring Tool and Slide Rest.
Weccaco Screw Company, Philadelphia, Screws, Circulars, Cutters, etc.
Thos. Hall, Philadelphia, Parallel Vises.
J. E. Mitchell, Philadelphia, Grindstone Fixtures.
R. S. Newbold & Son, Norristown, Metal Shearing Machines.
Prichards, Loudon & Kelley, Philadelphia, Band Saw and Wood-Cutting Machinery.
E. Andrews, Williamsport, Saw and Attachments.
Ferris & Miles, Philadelphia, Machine Tools and Steam Hammers.
Wm. Sellers & Co., Philadelphia, Steam Hammers and Machine Tools.
G. C. Walters, Philadelphia, Sewing Machines for Green Hides.
Joseph D. Oppenheimer, Philadelphia, Patent Steam and Hot Water Curling Tubes.
Geo. C. Howard, Philadelphia, Best Gearing for Sewing Machines.

GROUP XXIII.—AGRICULTURAL MACHINES, IMPLEMENTS OF AGRICULTURE, ETC.

Pennsylvania Agricultural Works, Philadelphia, Plow.
W. L. Boyer & Bro., Philadelphia, Union Horse Power.
Israel L. Lands, Lancaster, Durable Safety Swingle Tree.
Herbner & Sons, Landsdale, Railway Horse Power.
D. Root & Sons, Mount Joy, Cultivators.
A. J. Nellis & Co., Pittsburgh, Patent Process of Chilling Steel.
Farquar & Co., York, Horse Gear for Cotton Gin.
Maxwell, Rowlan & Co., Philadelphia, Shovels and Spades.
Smith & Harper, Philadelphia, Hoes and Rakes.
B. Rowland & Co., Philadelphia, Shovels, Spades, Scoops, etc.
D. Wimpfheimer, Philadelphia, Automatic Vinegar Vat.
A. J. Nellis, Pittsburgh, Hay Fork, Gripping Claw, etc.
Evans & Baird, West Chester, Power Churn.
H. P. Rankins, Allegheny, Meat Choppers.
Frank A. Parker, Reading, Apple Paring Machines.
August Nithinger, Philadelphia, Meat Chopper and Sausage Stuffer.
J. G. Koehler, Butter Tubs, Churns, etc.
J. Tingley, Philadelphia, Hand Power Churn.
W. L. Boyer & Bro., Philadelphia, Broom Corn Machinery.
A. B. Farquhar, York, Cotton Cultivator.
P. Embree & Sons, West Chester, Revolving Butter Worker (Hand.)
John A. Hafner, Pittsburg, Coil Spring for Threshing Machines.
The Wilbur Co., (Towanda,) Direct Draft Eureka Mowing Machines.
J. E. Bidwell, Pittsburg, Plow and Steel Crucible Casting Work.
J. L. Allen & Co., Philadelphia, Drill and Wheat Hoe.
Speakman, Miles & Co., West Chester, Butter Printing Table.
Thos. B. Boke, Philadelphia, Hand Churn.
Samuel Fisher, Philadelphia, Wheel Gang Plow with Cultivator.
J. R. Fitzburgh, Philadelphia, Hay Elevator.
Baugh & Sons, Philadelphia, Sectional Mills.
Finck & Co., Waynesboro', Portable Farm Engine.
S. Hauck & Bro., Lebanon, Cabbage Cutters.
C. B. Rogers, Philadelphia, Iron Cultivators.
Geo. Griffith, Philadelphia, Spades and Shovels.
Myers & Ervien, Philadelphia, Assortment of Forks.
T. Rowland & Son, Philadelphia, Shovels and Spades.

Pennock Manufacturing Co., Kennett Square, Double Arm Hay Fork.
Sheble & Fisher, Philadelphia, Hay and other Forks, and their Rakes.
Lehigh Car and Wagon Manufacturing Company, Sternton, Wagons, Farm and Express.
Lewis B. Covert, Philadelphia, Adjustable Ladder.
Barrows, Sarvey & Co., Philadelphia, Prindle's Steamer.
Homer J. Blakeslee, Corry, Improved Self-Acting Swing.
Fairbanks & Ewing, Philadelphia, Cheese, Factory and other Scales.
W. L. Boyer & Bro., Philadelphia, Combined Metal Mill and Bolting Screen.
John M. Smith & Son, Philadelphia, Cedar Vats and Tanks.
Geo. J Burkhardt, Philadelphia, Cedar Tank.
E. Penn Worrall, West Chester, Double Bee Hive.
Murphy & Broom, Philadelphia, Wire Cages, Wire Work, etc.
C. G. Blatchley, Philadelphia, Ice Cream Freezer.
Clement & Dunbar, Philadelphia, Cedar Ware, Churns and Ice Cream Freezer.
Pennsylvania Agricultural Works, York, Machine for Separating Rice from its Straw.
Lewis Lamborn, Hamorton, Hoe Harrows.
C. B. Rogers, Philadelphia, Fruit Boxes and Baskets.
A. J. Nellis & Co., Pittsburgh, Iron Tie for Binding Cotton.
Hillbow, Buckman & Co., Newtown, Hollenback Reapers.
Graham, Emlin & Passmore, Philadelphia, Lawn Mowers.
A. Speer & Sons, Pittsburgh, Hill-Side or Turn-rest Plow.

GROUP XXIV.—INSTRUMENTS OF MEDICINE, SURGERY, ETC.

Jno. Wyeth & Bro., Philadelphia, Pharmaceutical Preparations.
Alfred A. Gilbert, Philadelphia, Medicine Chest and Saddle Bag.
E. F. Houghton & Co., Philadelphia, Cosmoline.
Jas. A. Foster, Philadelphia, Artificial Limbs.
Wm. Hobser, Philadelphia, Druggist's Glassware and Chemists and Philosophical Glass.
D. W. Kolbe, Philadelphia, Artificial Limbs.
Thos. G. Morton, M. D., Philadelphia, Hospital Ward Carriages.
M'Ilvaine Bros., Philadelphia, Ground and Powdered Drugs and Dry Paints.
Wm. P. Wright, Philadelphia, Oiled Silks and Muslin.
Heckelman. M. D., Allegheny City, Anatomical Preparations.
Flemming & Talbot, Philadelphia, Galvanic Apparatus.
Philadelphia Truss Co., Philadelphia, Trusses.
Wm. H. Horn & Bros., Philadelphia, Trusses.
Wm. G. A. Bowwill, Philadelphia, Electro Magnetic Mallet.
D. W. Kolbe, Philadelphia, Orthopœdic Instruments.
Quincy A. Scott, Pittsburgh, Atmospheric Disc-Dental Work.
Robt. A. Hance, Philadelphia, Fluid Extracts (Medicinal.)
Hance Bros. & White, Philadelphia, Conical Plate Drug Mill and Percolator.
Samuel S. White, Philadelphia, Dentists' Instruments.
Dr. David Ahl, Newville, Cumberland County, Adaptable Porous Splints.
Samuel S. White, Philadelphia, Dental Engine.
Horatio G. Kern, Philadelphia, Dental Extracting Forceps.
H. D. Justi, Philadelphia, Artificial Teeth.
Charles Abbey & Sons, Philadelphia, Gold Foil.
W. R. Warner, Philadelphia, Sugar Coated Pills.
Henry Bower, Philadelphia, Glycerine.
Robert Shoemaker & Co., Philadelphia, Drug and Fluid Extracts.

Mellor & Rittenhouse, Philadelphia, Extracts of Liquorice in Mass and Rolls.
Perry Vincent, Germantown, Elastic Bandages for Surgical Purposes.
Jacob T. Tenfel, Philadelphia, Dental Forceps.
J. K. Geming, Philadelphia, Surgical Instruments.
B. Frank Palmer, LL. D., Philadelphia, Artificial Limbs.
Samuel S. White, Philadelphia, Artificial Teeth and Dental Chairs.
J. B. Seeley, Philadelphia, Trusses.
E. C. Penfield & Co., Philadelphia, Trusses.
Frederick Brown, Philadelphia, Essence of Jamaica Ginger and other Pharmaceutical Compositions.
Boesioke & Tafel, Philadelphia, Homœopathic Preparations.

GROUP XXV.—INSTRUMENTS OF PRECISION, RESEARCH, ETC.

Henry G. Lenhert, Philadelphia, Collection of Brass Instruments.
W. H. Pite & Sons, Philadelphia, Specific Gravity Apparatus, Graduated Tubes, etc.
Thos. Shaw, Philadelphia, Pressure Gauge.
W. J. Phillips, Telegraph Director, Philadelphia, Printing Telegraph Instruments.
Samuel Archibald, Philadelphia "Marsland" Water Metre.
Riehte Bros., Philadelphia, Weighing and Testing Machines.
Henry Troemner, Philadelphia Scales and Balances.
John C. Dell, Philadelphia, Scales and Weights.
Price, Lipsett & Co, Philadelphia, Weighing Scales.
William Kuebler, Philadelphia, Surveying Instruments.
Hiller & Brightbey, Philadelphia, Surveying Instruments.
Hietel Bros. & Geisler, Philadelphia, Improvement in Lever Watches.
John L. Gropengiesser, Philadelphia, Astronomical Clocks.
James Cremer, Philadelphia, Graphoscope.
Wm. J. Young & Son, Philadelphia, Surveying Instruments and Astronomical Circle.
L. J. Marcy, Philadelphia, Line Light Sciopticon and Oil Light Sciopticon.
Joseph Zentmayer, Philadelphia, Microscopes.
Price, Lisreth & Co., Philadelphia, Weighing Scales.
S. W. Robison, Philadelphia, Tool for Cutting out Photographs.
C. F. Martin, Nazareth, Guitars.
Albrecht & Co., Philadelphia, Piano Fortes, Grand and Square.
Knox & Shain, Philadelphia, Philosophical Apparatus.
August Parrott, Philadelphia, A Tonognomer.
Riggs & Bro., Philadelphia, Taffrail Log.
John Pfaff, Philadelphia, Flutes and Clarionettes.
E. Paulus, Philadelphia, Watches and Clocks.
Henry Q. Tan & Son, Philadelphia, Mason & Carpenter's Dry Bevel.
Louis H. Spellier, Doylestown, Clocks.
Wm. Seefeldt, Philadelphia, Brass Instruments.
Wm. F. Schmoele, Philadelphia, Orchestrions.
Schomacker & Co., Philadelphia, Grand, Square and Upright Pianos.
C. F. Zimmerman, Philadelphia, Accordeons and Concertinas.
T. Alteneder, Philadelphia, Drawing Instruments.
John Albert, Philadelphia, Violins, Violas, Contra Bass, Cithers.
Chas. F. Albert, Philadelphia, Violins, Violincellos and Violas.
Jacob Diamond, Pittsburgh, Lenses and Eye Glasses.
Joseph Neff, Philadelphia, Violins, Violas and Violincellos.
M'Donald Piano Forte Manufacturing Company, Williamsport, Square Piano Forte.

N. H. Edgerton, Philadelphia, Philosophical Instruments, Polariscope and Stereopticon.

L. Black & Co., Philadelphia, Spectacle and Eye Glass Frames.

Burdett Organ Company, Erie, Reed Organ.

A. Faas & Co., Philadelphia, Square Piano.

Henry G. Lehnert Philadelphia, Brass Instruments, Cymbals, etc.

Conrad Meyer & Sons, Philadelphia, Square Piano Forte.

Patrick & Carter, Philadelphia, Telegraph Sounders, Leamer's Apparatus, etc.

Jas. Queen & Co., Philadelphia, Mathematical and Drawing Instruments, Microscopes.

Wm. H. Walnesley, Philadelphia, Microscopic Objects.

T. A. Wilson, Reading, Spectacles and Eye Glasses.

Goodwin & Co., Philadelphia, Gas Meters, etc.

Harris, Griffin & Co., Philadelphia, Gas Meters, etc.

GROUP XXVI.—ARCHITECTURE AND ENGINEERING.

Wm. C. Allison & Co., Philadelphia, J. Hoskins Sheet Metal Gauge.

Joseph M. Wilson, Philadelphia, Design of Passenger Railway Station, Washington, D. C., and Plans of Sundry Railway Stations, Pennsylvania Railway Station, West Philadelphia.

Henry Pettit and Jos. M. Wilson, Philadelphia, Main Exhibition Building, Machinery Hall, and adjacent Boiler Houses for the International Exhibition of 1876.

Champion Iron Fence Co., Philadelphia, Iron Fence.

H. F. Krause, Philadelphia, Maps.

J. M. Wilson, C. E., Philadelphia, Working Drawings of Bridges, etc., P. R. R.

J. Dutton Steele, C. E., Pottstown, Model Drawing and Description of Falls Bridge.

W. C. Allison & Sons, Philadelphia, Agents for Revolving Scraper Company, Revolving Scraper for Removing Earth.

Thos. H. Speakman, Philadelphia, Combined Wire and Wood Fence for Farm Use.

Clarke, Reeves & Co., Philadelphia, Girard Avenue Bridge Across the Schuylkill.

Pennsylvania Geological Survey Commission, (Pennsylvania,) Philadelphia,) Philadelphia Geological Map in Relief, (Pennsylvania,) Geological Charts, etc., (Pennsylvania.)

Keystone Bridge Co., Philadelphia, Illinois and St. Louis, Steel-Arched Bridge and Improvement in Pivot or Spring Bridges.

GROUP XXVII.—PLASTIC AND GRAPHIC ART.

Broadbent & Phillips, Philadelphia, Photographs.

F. R. Wenderoth, Philadelphia, Heliographs.

Schreiber & Son, Philadelphia, Photographs.

American Photo-Relief Co., Philadelphia, Photo-Relief Prints.

E. G. Chormann, Philadelphia, Artist's Easel, etc.

Van Gunden, Philadelphia, Tomb Stones and Mural Marble Work.

Bachman, Philadelphia, Ivory Carvings.

Wells & Hope Co., Philadelphia, Chromo-Lithographic Iron Show Cards.

Mrs. Joseph Harrison, Philadelphia, Oil Painting by Prof. C. Schusrele, Philadelphia.

F. Gutekunst, Philadelphia, Photographs.

W. Curtis Taylor, Philadelphia, Photographs.

Louis Mayer, Philadelphia, Specimens of Music Publications.

J. L. Smith, Philadelphia, Map Stands, (School, Library or Office.)

J. B. Lippincott & Co., Philadelphia, Various Works in History, Biography, Science and Education.

Northern Home, Philadelphia, Various Specimens of Industrial Skill.

T. Ellwood Zell, Philadelphia, Works of Reference, Encyclopœdia, Atlas of the World, Encyclopœdia of American Literature.

E. S. Wilson, Philadelphia, Photographic Literature.

Ivan C. Michels, Philadelphia, a Book (in MSS.) containing the Lord's Prayer in Five Hundred Different Languages.

John E. Potter, Philadelphia, Bible Encyclopœdia. A Self Interpreting Bible.

John Welsh, Philadelphia, Oil Painting, (By Miss F. A. Ortman, Paris, France.)

J. H. Rothermel, Philadelphia, Oil Painting.

H. Herzog, Philadelphia, Oil Painting.

Peter Moran, Philadelphia, Oil Painting and Etching.

Emily Sartain, Philadelphia, Oil Painting.

Jos. Hoover, Philadelphia, Chromo Lithograph.

Henry Brown, Philadelphia, Miniatures.

H. Roberts, Philadelphia, Sculpture.

Miller & Knipe, Philadelphia, Medallion in Relief—Bronze.

Centennial Photograph Co., Philadelphia, Photographs.

Carl Seiler, Philadelphia, Photographs.

John Carbutt, Philadelphia, Heliographs.

Baker, Arnold & Co., Philadelphia, Artistic Castings, Lamp Burners, etc.

Keiser & Herzog, Decorations and Fresco.

John M'Arthur, Philadelphia, Design for Public Buildings in Philadelphia.

Schwartzmann & Kafka, Philadelphia, Various Structures in Exposition Grounds.

J. W. Lauderback, Philadelphia, Wood Engraving.

P. F. Wharton, Philadelphia, Oil Painting.

GROUP XXVIII.—EDUCATION AND SCIENCE.

N. B. Kneass, Philadelphia, Press, Type and Plates for Printing Literature and Music for the Blind.

M. J. Mitcheson, Philadelphia, For an Exhibit of Materials relating to Sunday Schools.

Pennsylvania Institute for Feeble-Minded Children, Media, Diploma.

The Northern Home for Friendless Children, Mrs. E. E. Hutter, President, Philadelphia, Kindergarten Class of Eighteen Orphan Children.

H. C. Baird & Co., Philadelphia, Various Publications.

J. H. Butler & Co., Philadelphia, Books and Maps.

Claxton, Remsen & Heffelfinger, Philadelphia, Books.

Cowperthwait & Co., Philadelphia, Books.

Lindsay & Blakiston, Philadelphia, Medical, Dental and Scientific Books.

Porter & Coates, Philadelphia, Books.

Sower, Potts & Co., Philadelphia, Books.

Henry Whilale, Planisploere.

Miss Rachel Walk, Philadelphia, Kindergarten.

I. Newton Pierce, School Desks.

J. H. M'Ilvain, Philadelphia, Specimens in Natural History.

Kay & Bros., Philadelphia, Law Books.

F. and J. W. Johnson & Co., Philadelphia, Law Books.

Peirce's Union Business College, Philadelphia, Penmanship, Book-keeping, Publications Showing Courses of Instruction, etc.

The Franklin Institute, Philadelphia, Collections of Machines, Models, Drawings, Portraits, Photographs, etc.

Grebbie & Barrie, Philadelphia, Publications.

Miss Grace Anna Lewis, Kimberton, Chart of Natural History.

John Davis, Allegheny City, Astronomical Apparatus.

N. H. Edgerton, Philadelphia, Philosophical and Chemical Apparatus.

Board of Education, Easton, Pupils' Work, Photographic Views, Plans, etc.

Board of Education, Allentown, Pupils' Work, Plans, Photographs, etc.

Board of Education, Reading, Pupils' Work, Photographic Views, Statistics, etc.

Board of Education, Bucks county, School Work, Educational Statistics, etc.

Board of Education, Pittsburgh, Pupils' Work.

Board of Education, Lancaster county, Pupils' Work, Statistics, etc.

Girard College, Philadelphia, Drawings, etc.

Girls' Normal School of Philadelphia, Pupils' Work.

Institute for the Instruction of the Blind, Philadelphia, Pupils' Work.

Lafayette College, Easton, Charts, Models and Students' Work.

School of Design for Women, Philadelphia, Drawing and Industrial Drawing.

State Department of Public Instruction, Pennsylvania Systems and Agencies of Public Education.

State Normal School, Millersville, Chart Showing Courses of Study, Statistics, etc.

Polytechnic College of State of Pennsylvania, Philadelphia, Publication, Work of Students in Natural History, etc.

University of Pennsylvania, Philadelphia, Books and Apparatus of Instruction.

Soldiers' Orphan School of State of Pennsylvania, Collections of Photographs, Plans, School and Shop Work.

GROUP XXIX.—HORTICULTURAL APPLIANCES.

Chas. H. Miller, Germantown, Design for the Parterre.

Stephen W. Smith, Philadelphia, Preserved Flowers.

Miller, Quackenboss & Co., Philadelphia, Garden Vases.

Henry A. Dreer, Philadelphia, Garden Requisites, etc.

I. M. Hess & Son, Philadelphia, Hanging Baskets, Ferneries and Plant Cases.

Mrs. Henry C. Wilson, Philadelphia, Phantom Bouquet.

Robt. Wood & Co., Philadelphia, Iron Vases.

John Dick, Philadelphia, Improved Hot Water Boiler for Heating Green House.

Thos. J. Myers & Son, Philadelphia, Greenhouse Boiler for Heating Hothouses.

Miller & Hayes, Philadelphia, Ground Plans for Improving Residences.

M. Walker & Sons, Philadelphia, Wire Work.

Harvey & Adamson, Philadelphia, Terra-Cotta Ware.

Galloway & Graff, Philadelphia, Terra-Cotta Vases, etc.

M. M. Boyersdorfer & Co., Philadelphia, Bouquet Holders.

W. Mitchell, Philadelphia, Portsilica Vase.

Pennock Bros., Philadelphia, Plant Case.

F. O. Hanson, Philadelphia, Enclosure.

Hoopes Bros. & Thomas, West Chester, Ivies, Evergreen Trees and Plants.

John Dick, Philadelphia, Decorative and Foliage Plants, Ornamental, Hothouse and Greenhouse Plants.

Miller & Hayes, Germantown and Mt. Airy, Roses, Ornamental Flower Garden Plants Arrangement, Tree Ferns and Evergreen Trees.

Mahlon Moon, Morrisville, Hothouse and Greenhouse Plants, Ornamental Trees and Shrubs.

R. Buist, Philadelphia, Roses and Plants.
James Warner, Bridesburg Station, Circulating Water Heater.
A. L. Felton, Philadelphia, Decorative and Ornamental Plants.
Robert Scott, Philadelphia, Roses.
Thomas Meehan, Germantown, Ornamental Trees and Shrubs.
Thomas J. Mackenzie, Philadelphia, Decorative and Ornamental Foliage Plants.
Henry A. Dreer, Philadelphia, Decorative and Ornamental Plants.
Mrs. John Ware, Philadelphia, Preserved Flowers and Hair Work.
Thomas J. Maginnly, Philadelphia, Ornamental and Decorative Plants.
Wm. F. Boyle, Philadelphia, Ornamental and Decorative Plants.
Thomas Robertson, Philadelphia, Ornamental Foliage Plants.

GROUP XXX.—HORSES, MULES AND ASSES.

Mark Devine, Philadelphia, Trotting Filly.
M'Kean & Husick, Easton, Carriage Team.
Wm. M'Bride, Philadelphia, Horse and Trotting Mare.
J. B. Baker, Jr., Thorndale, Roadster Gelding.
Brinton King, Chaddsford, Horse.
R. Hassenyer, Philadelphia, Horse.
M'Kean & Husick, Easton, Horse ("Ivanhoe") and Team.
Joseph B. Baker, Thorndale, Roadster Stallion.
Chas. L. Sharpless, Philadelphia, Trotting Stallion, Roadster Stallion, Horse, Trotting Filly.
Joseph B. Baker, Thorndale, Stallion.
Joseph B. Baker, Jr., Thorndale, Roadster Stallion.
A. Welch, Philadelphia, four Mares, Stallion and Horse.
James Moore, Philadelphia, two Mares and Filly.
J. J. Parker, West Chester, Yearling Filly, Horse and Yearling Colt.
J. Halter Gross, Philadelphia, Horse.
Joseph K. Carpenter, Philadelphia, Roadster Gelding.
Colin Cameron, Lancaster county, Mare.
F. H. Yeagher, Alburtis, Draft Stallion.
W. Meikle, Indiana, Stallion and Filly.
M. Riley, Philadelphia, Horse.
J. S. Stewart, West Chester, Horse.
Mr. Justice, Philadelphia, Gelding.
T. Justice, Philadelphia, Pony.
Joseph Nichols, Holmesdale, Walking Horse.

GROUP XXXI.—HORNED CATTLE.

J. B. Longnecker, Union Deposit, Devon Herd, one Bull, four Cows; Devon Bull, "Jerome;" Devon Bull, "Prince John;" Devon Cow, "Mary May;" Devon Cow, "Dollie;" Devon Cow, "Annie Laurie;" Devon Cow, "Deer;" Devon Cow "Fairy;" Devon Cow, "Daisy;" Devon Bull, "President."
J. Chester Morris, West Chester, Devon Herd, one Bull; four Cows.
T. S. Cooper, Coopersburg, Ayrshire Bull, "Lord Lorn," three years old; Ayrshire Cow, "Handsome," three years old; Ayrshire Cow, "Flora," five years old; Ayrshire Herd, Bull and four Cows.
T. T. Tasker, Philadelphia, Ayrshire Herd, Bull and four Cows; Ayrshire Bull, "Red Butterfly," two years old; Ayrshire Heifer, "Topsy," three years old; Ayrshire Cow, "Daisy," seven years old; Ayrshire Cow, "Fancy," five years old.

Thomas L. M'Kean, Easton, Short Horn Bull, "Duke of Chestnut Grove;" Short Horn Heifer, "Miss Belle;" Herd of Short Horn Cattle, one Bull and four Cows; Short Horn Cow, "Lady of Lehigh;" Short Horn Heifer, "Jubilee of Easton;" Short Horn Heifer, "Red Rose;" Short Horn Heifer, "Cinderella 4th"; Short Horn Heifer, "4th Duchess of Lehigh;" Short Horn Cow, "Denorah 4th."

H. H. Duyskinck, Chambersburg, Pair of Grade Short Horn Oxen.

J. Claude White, Swatara, one Breton Bull.

John Patterson, Chester, Jersey Heifer, "Jenny Giddes," one year old.

F. C. Yarnall, Overbrook, Jersey Heifer, "Dorothea of Wymdon," one year old; Jersey Bull, "Walbrook," four years old.

W. Massey, Philadelphia, Jersey Cow, "Dolly Bismarck," two years old; Jersey Bull, "Count Bismarck," six years old; Jersey Cow, "Tulip of St. Malo," three years old.

Hugh M'Illvaine, Philadelphia, Jersey Cow, "Patty M'3d," two years old; Jersey Cow, "Queen of Glenwood," two years old; Jersey Cow, "Emma Mac2d," four years old.

Samuel J. Sharpless, Philadelphia, Jersey Cow, "Cyrene," nine years old; Jersey Cow, "Niobe," eighteen years old; Jersey Cow, "Stella le Brocq;" Jersey Cow, "Jewel Beauty," eight years old.

Charles Lafferty, Philadelphia, Jersey Bull, "September," six years old.

W. R. Williams, Falls of Schuylkill, Jersey Bull, "Pilate," four years old.

Charles L. Sharpless, Philadelphia, Jersey Herd, "Chelton Duke," "Black Bess," "Milkmaid," "Siberia," "Lady Maud;" Jersey Heifer, "Alida Ashton," one year old; Jersey Cow, "Lady Maud," two years old; Jersey Cow, "Siberia;" Jersey Cow, "Milkmaid," nine years old; Jersey Cow, "Black Bess," seven years old; Jersey Bull, "Lord Byron," five years old; Jersey Bull, "Chelton Duke," four years old.

Chas. Wheeler, Philadelphia, Jersey Cow, "Bouquet," nine years old; Jersey Cow, "Garland," ten years old; Jersey Cow, "Elspeth," three years old.

Hugh McIlvaine, Philadelphia, Jersey Cow, "Emma Mac 3d," two years old.

GROUP XXXII.—SHEEP.

T. S. Cooper, Coopersburg, three Shearling Ewes, Oxforddowns; Ram, Oxforddown, Sweepstakes; three fat Ewes, Oxforddowns; one Ram and four Ewes, (Ram named "Sweepstakes,") Oxforddowns; three Shearling Ewes, Oxforddowns; three Yearling Ewes, Oxforddowns; three Breeding Ewes, breed by "Druce;" pen of four Ewes and Ram, Oxforddowns; three Yearling Ewes, Oxforddowns; Ram, Oxforddown, three years old, "Royal Hull;" Ram, two years old, "Duke of Oxford;" "Pennsylvania" Ram and six Ewes; three Breeding Ewes, Oxforddowns.

Robt. Perrine, Patterson's Mills, three American Merino Yearling Ewes; four Ewes and one Ram, American Merino; three Breeding Ewes, American Merino; Ram, one year old, American Merino; American Merino Ram, two years old; American Merino Ram, "Sanford," five years old.

W. L. Archer, Burgettstown, three Yearling Ewes, American Merino; three Breeding Ewes, American Merino; four Ewes and one Ram, American Merino.

Perrine & Meholm, Patterson's Mills, American Merino Ram, "Jerry," two years old.

Perrine & Cunningham, Patterson's Mills, American Merino Ram, three years old.

H. E. Taylor, Patterson's Mills, Ram, "Symmetry," two years old, American Merino.

Perrine & Archer, Patterson's Mills, one American Merino Ram.

GROUP XXXIII.—SWINE.

T. S. Cooper, Coopersburg, Berkshire Boar, "Humphreys N. Smithereen;" Berkshire Sow, "Bellodowna;" Berkshire Sow, "Stumpy;" three Berkshire Sows, "Sallie E," "Sallie F," "Sallie 8th;" three Berkshire Sows, "Lady Plymouth 1st and 2d," and "Lady Plymouth;" Berkshire Boar and two Sows, "Sallie G," "Sallie H," "Humphrey Smithew;" Berkshire Boar and two Sows, "Belladonna," "Sallie Smithews," "Model of Perfection;" best herd of Swine; Berkshire Sow, "Belladonna;" Berkshire Boar, "Crown Prince 2d;" Berkshire Boar, "Young Liverpool 2d;" Berkshire Boar, "Lord Smithereen;" Berkshire Boar, "Sambo 13th;" Berkshire Boar, "Sambo 12th;" Berkshire Boar, "Swemsweetz's Sambo;" Berkshire Boar, "Smithereen Model of Perfection; Berkshire Boar, "Young Plymouth;" Berkshire Sow, "Sally;" Berkshire Sow, "Lady Walters;" Berkshire Sow, "Sallie H;" Berkshire Sow, "Sallie H;" Berkshire Sow, "Lady Plymouth;" Berkshire Sow, "Lady Plymouth 2d;" Berkshire Sow, "Stumpy 3d;" Berkshire Sow, "Sallie E;" Berkshire Sow, "Sally 8th," (daughter;) Berkshire Sow, "Sallie D;" Berkshire Sow, "Stumpy 8th;" Berkshire Sow, "Sallie F;" Berkshire Sow, "Beauty 2d."

J. W. Leigh, Branchtown, small Yorkshire, "Kinnitwulb;" small Yorkshire, "Stonebrigh."

Edward Walter, Kennettsy, Chester White Sow, "Lady;" Chester White, "Romeo;" Chester White Boar, "Kennet."

James C. Roberts, West Chester, Chester White Sow, "Lucy;" Chester White Sow, "Fashion;" Chester White Sow, "Polly Patterson;" Chester White Sow, "Katie Green;" Chester White Boars, "White Cloud," "Fred" and "Goodenough."

Henry Milton, Ridgetown, Chester White Sows, "Champion," "Slick" and "Excelsior."

J. Shaner, West Chester, Chester White Pen, three Sows; Chester White Sows, "Fancy," "Betts" and "Maggie;" Chester White Boars, "Gill and Tobs."

John Randolph, Philadelphia, Chester White Boar and two Sows; Chester White Sow, "Onsson;" Chester White Boar; one Boar; Chester White Sow; Yorkshire Boar and Sow.

E. B. Ashbridge, Willistown, one Chester White Boar and two Sows, "Mac," "Mary," "Disraeli;" Chester White Sow and three Pigs; Chester Sow and six Pigs; Chester Sows, "Mary," "Nancy," "Fancy," "Sallie," "Lady" and "Betts;" Chester Boars, "Tom," "Mac," "Jim" and "Jack;" Chester Barrow Hog.

GROUP XXXIV.—DOGS.

W. W. Colkett, Philadelphia, Imported English Setter Dog.

Frank Kelley, Philadelphia, English Setter Dog.

C. Settle, Philadelphia, Native English Setter Dog.

C. S. Westcott, Philadelphia, five Native English Setter Puppies; Imported English Setter.

Samuel Bar, Philadelphia, Native English Setter Bitch.

J. A. Porter, Philadelphia, Native English Setter Dog.

Ward H. Bent, Philadelphia, Native English Setter Dog.

J. B. Settle, Philadelphia, Native English Setter Dog.

Chas. P. Tasker, Philadelphia, Native English Setter Dog; Imported English Setter Bitch; Setter Dog.

W. H. Nugent, Philadelphia, Native English Setter Dog.

G. W. Twaddle, Philadelphia, Native English Setter Dog.

Jos. M'Kinney, Philadelphia, Native English Setter Dog, "Pup."

Major Abburger, Philadelphia, Poodle Dog, "Tom," one year old.

W. Meikle, Indiana county, Sheep Dog, "Jim," in puppy class, nine months old; Sheep Dog, "Watty," over one year and under two; Imported English Setter Dog.

F. C. Yarnoll, Overbrook, Sheep Bitch, "Ring," over two years old.

George Aitken, Chester county, Sheep Bitches, "Sheperdess," under twelve months; "Home Nellie," "Skye" and "Hairless."

G. C. Rodgers, West Philadelphia, Mexican Cross, "Tip."

James Berry, West Philadelphia, Sheep Dog, "Shep."

H. Hill, West Philadelphia, Sheep Dog, "Neptune."

Julius Holstien, Allentown, Siberian and Mastiff Cross, "Rover."

C. Lafferty, Philadelphia, Scotch Terrier Dog, "Duke."

James Smith, Philadelphia, Scotch Terrier Bitch, "Lilly."

A. C. Harrison, Philadelphia, Scotch Terrier Bitch, "Queenie."

G. W. Smith, Philadelphia, Scotch Terrier Dog, "Tip."

L. D. Wetzlar, Philadelphia, Scotch Terrier Dog, "Skye."

W. W. Harrison, Philadelphia, Scotch Terrier Dog, "Fly."

E. Newman, Philadelphia, Siberian or Ulm Dog, "Sedan."

Philip Hohe, Philadelphia, Siberian or Ulm Dog, "Nero."

W. A. & A. F. Mullin, Mount Holly Springs, Gordon Setters.

Richard Torpin, Jr., Philadelphia, Gordon Setter Bitches.

Henry Metcalf, Philadelphia, Irish Setter Dogs.

Wade H. Marrish, Jr., Philadelphia, Irish Setter Puppies.

Walter H. Bryant, Philadelphia, Irish Setter Bitch, (imported.)

John S. Davis, Philadelphia, Native Irish Setter Dogs.

Charles E. Swain, Philadelphia, Native Irish Setter Puppies.

A. A. Clay, Philadelphia, Native Irish Setter Puppies.

James Y. Martin, Philadelphia, Pointer Puppies under one year.

W. H. Nugent, Philadelphia, Spaniel Bitches over two years.

J. W. Leigh, Branchtown, Spaniels other than pure Irish Dogs over two years.

Jos. T. Bailey, Philadelphia, Pointer Dogs over one and under two years.

F. A. Tremaine, Philadelphia, Pointer Dogs over fifty pounds.

William Effingham, Philadelphia, Pointer Dogs over fifty pounds.

Henry O'Donnell, Philadelphia, Beagle Bitch, over one year and under two, "Fannie," black, white and tan; Beagle Dog, over one year under two, "Ranger," black, white and tan.

J. M. Powell, Philadelphia, Dachslund Dog over one under two years, "Duke."

Richard Hartley, Philadelphia, Harrier, over two years, "Bilbrough," black and tan.

J. Shaner, West Chester, six Fox Hound Puppies.

Franklin Clayton, Marshalton, Black and Tan Fox Hound, "Drive," over two years; "Sawley," Black and Tan Fox Hound Bitch, over two years.

J. J. Hughes, Gulf Mills, Fox Hound Bitch, "Daisy," speckled, over two years.

Jonathan Yerkes, Leopard, Chester county, Fox Hound Bitch, over two years.

Thomas P. Farding, Lancaster, Pointer Dogs, under two years.

Thomas Dunbar, Philadelphia, Pointer Dogs, under fifty pounds, between one and two years.

James H. Laws, Philadelphia, Pointer Dogs, under fifty pounds.

Thos. Manly, Zoological Garden, West Philadelphia, Chinese Edible Dog, "Piero."

Robert Murray, Philadelphia, Newfoundland and St. Bernard Cross, "Nero."

J. C. Bailey, Philadelphia, Pug Dog, "Scot," and Bitch, "Vic."

H. W. Sharpless, Philadelphia, Pug Dog, "Sambo," and Bitch, "Topsy."

F. S. Miller, Philadelphia, Mexican Hairless Dog, "Sport," and Bitch, "Nellie."

Thomas Biddle, Philadelphia, Sheffield Terrier Bitch, "Dazzle," and Dog, "Gem;" Bull Bitch, "Patch;" Bull Dogs, "Bob" and "Dandes."

Mrs. Jennie Gates, Philadelphia, Maltese Terrier, "Mite."

J. W. Aldridge, Philadelphia, Toy Cuban Lap Bitch, "Fusee."

John Moran, Philadelphia, Poodle Dog, "Jim."

Alex. Glass, Philadelphia, Poodle Dog, "Geo. Washington."

Miss Anna J. Ball, Philadelphia, Pomeranian Dog, "Snow Ball."

Thomas Hadfield, Philadelphia, Toy Terrier Bitch, "Gipsey."

E. D. Whitney, Philadelphia, Pomeranian Dog, "Rex."

Mrs. Mary J. Francis, Philadelphia, Toy Terrier Bitch, "Nell."

F. M'Fadden, Philadelphia, Pomeranian Dog, "Barney."

John Spealer, Philadelphia, Toy Terrier Dog, "Jesse."

G. W. Paterson, Philadelphia, Toy Terrier Dog, "Reddy."

James Hanton, Philadelphia, Broken Haired Terrier, "Loafer."

A. Barracleugh, Philadelphia, Scotch Terrier Bitch, "Rhody."

J. A. Chambers, Philadelphia, Scotch Terrier Bitch, "Nellie," and four Puppies; Scotch Terrier Bitch, "Wasp;" Scotch Terrier Dog, "Charley."

Edward R. Worrall, Philadelphia, Pointer Bitch, under fifty pounds and over two years.

Max Hillnick, Philadelphia, Pointer Dogs, under fifty pounds, over two years.

Henry Schreiber, Philadelphia, Native English Setter Dog, over two years, "Grouse."

Charles W. Jackson, Philadelphia, Greyhound Puppies, under one year, "Duke" and "Fannie."

August Simon, Philadelphia, Greyhound, over two years, "Sam."

F. C. Foulkodorf, Philadelphia, Greyhound Bitch, over two, "Pet."

L. Eming, Philadelphia, Greyhound Bitch, over two years, "Belle."

Mrs. J. J. Allen, Philadelphia, White Italian Greyhound, two years and two months "Nobby."

Thos. David, Philadelphia, Beagle Puppy, under twelve, "Rush," black and white.

Louis C. M'Clay, Philadelphia, Native English Setter Dog.

Conrad Schrieber, Philadelphia, Native English Setter Bitch.

George C. Morris, Philadelphia, Native English Setter Dog.

William Sanderson, Philadelphia, Skye Terrier.

William Mellor, Shoemakertown, Skye Terrier.

Francis Schrieber, Philadelphia, Skye Terrier, "Harry."

Thomas Byne, Philadelphia, Black and Tan Bitch.

Richard Berryman, Philadelphia, Black and Tan Bitch.

Jos. Hanlon, Philadelphia, Black and Tan Terrier, "Jim."

C. H. Roney, Philadelphia, Black and Tan Terrier.

W. P. Mange, Philadelphia, Bull Terrier Bitch.

Abel Barracleugh, Philadelphia, Bull Terrier Dog, "Sam."

Jos. Bighy, Philadelphia, Bull Terrier Dogs, "Nelson," "Nelson, Jr."

Geo. Hunter, Philadelphia, Bull Terrier Bitches, "Kate;" Bull Terrier Puppy, "Spider."

C. C. Holdeman, West Philadelphia, Dalmatian Dog.

Oberkirsch & Hammer, Philadelphia, Siberian or Ulm Dog.

E. K. Harrison, Philadelphia, Dalmatian Bitch, "Vic."

P. R. Scherr, Philadelphia, True Newfoundland Bitch.

E. Bd. E. Picot, Branchtown, True Newfoundland Bitch, and Imported Newfoundland, "Leo."

T. C. Stillwagon, Philadelphia, True Newfoundland Bitch, "Dido." Newfoundland, "Neptune," Imported from Nova Scotia.
Miss Burt, Philadelphia, Great Labradorean Newfoundland, "Scot."
Hamilton Egbert, Philadelphia, Great Labradorean Newfoundland, "Leo."
Philip Hohe, Philadelphia, Siberian or Ulm, "Flora."

LIST OF SPECIAL AWARDS.

W. H. Nugent, Port Richmond, Cocker Spaniel.
J. Shaner, West Chester, two Foxhounds.

GROUP XXXV.—FOWLS.

B. F. Lewis, Philadelphia, Rabbits and Guinea Pigs.
G. W. Fredericks, Philadelphia, Fowls, Turkeys, Game Fowls.
Benson and Burpee, Philadelphia, Fowls, Turkeys, Geese, Pigeons.
B. F. Lewis, Philadelphia, Turkeys and Ducks.
Oliver D. Schock, Hamburg, Ducks and Pigeons.
Mark Schofield, Philadelphia, Ducks.
A. L. Hawkins, Media, Ducks.
Thos. Y. England, Philadelphia, Turkeys.
Chas. P. Matlack, Philadelphia, Turkeys.
M'Kern & Kulick, Easton, Turkeys, Pigeons, Fowls.
E. S. Wheatley, Girard Manor, Turkeys.
Edwin Johnson, Darlington, Ducks, Fowls.
Saml. J. Sharpless, Philadelphia, Ducks.
Geo. A. Baker, Reading, Fowls.
Wm. Bellman, Harrisburg, Fowls.
J. C. Long, Jr., Philadelphia, Fowls, Pigeons, Hamburg's.
James Morton, Philadelphia, Fowls.
Mrs. L. D. Davis, Philadelphia, Song Bird.
P. M. Baker, Philadelphia, Pigeons.
J. F. Baker, Philadelphia, Pigeons.
John Loyle, Philadelphia, Pigeons.
Thos. Scholes, Philadelphia, Pigeons.
John Spearlin, Philadelphia, Pigeons.
Henry Eardman, Philadelphia, Pigeons.
John Grist, Philadelphia, Pigeons.
J. H. Goss, Philadelphia, Pigeons.
L. Wister, Philadelphia, Pigeons.
E. W. Seybolt, Philadelphia, Pigeons.
C. E. Long, Lancaster, Pigeons; variety of Fowls.
W. W. Clark, Philadelphia, Pigeons.
H. Taylor, Chester, Pigeons.
Hurst & Taylor, Oakdale, Pigeons; variety of Fowls.
Thos. Grist, Philadelphia, Pigeons.
J. Tombleson, Philadelphia, Pigeons.
James Smith, Philadelphia, Pigeons.
J. D. White, Chicopee, Pigeons.
J. Donnely, Doylestown, variety of Fowls.
John Stowe, Coatesville, variety of Fowls.
Wm. Lwezey, Philadelphia, variety of Fowls.
Dr. F. F. Corson, Philadelphia, variety of Fowls.

J. J. Wilson, Philadelphia, one pair White Booted Bantam Fowls.
A. P. Groves, Philadelphia, variety of Fowls.
H. M. Barns, Philadelphia, variety of Fowls.
J. G. Darlington, Philadelphia, variety of Fowls.
T. Webster, Doylestown, variety of Fowls.
C. B. Eben, Pittsburgh, variety of Fowls.
A. M'Lanen, Meadville, variety of Fowls.
Henry Erdman, Philadelphia, Hamburg's.
Jos. Schefeild, Philadelphia, Hamburg's.
Jas. Schofeild, Glen Riddle, Hamburg's.
W. F. Eisehardt, Doylestown, Hamburg's Fowls.
John Schofield, Philadelphia, Hamburg's.
W. T. Rogers, Doylestown, Hamburg's.
Amos Stone, Doylestown, Fowls.
Wm. Wister, Philadelphia, Game Fowls.
John Dickson, Philadelphia, Game Fowls.
Edw. W. Twadell, Philadelphia, Guinea Pigs.
T. Springfield, Philadelphia, Pigeons.
C. Franck, Philadelphia, Pigeons.
Stephen Taylor, Fallsington, variety of Fowls.
S. F. Penrose, Richland, variety of Fowls.
W. H. Myres, New Oxford, variety of Fowls.
D. B. Darlington, Philadelphia, variety of Fowls.
Benj. Mann, Philadelphia, variety of Fowls.
W. T. Bell, Franklin, Fowls.
Stephen Taylor, Fallsington, Fowls.
Jesse N. Rooke, Philadelphia, Pheasants.
J. G. Darlington, Philadelphia, Fowls.
J. J. Parker, West Chester, Fowls.
B. F. Lewis, Philadelphia, Cat and Fowls.
A. L. Smith, Philadelphia, Pea Fowls.
Mary B. L. Smith, Philadelphia, Guinea Fowls.
W. W. Bell, Philadelphia, Fowls.
John Cugley, Philadelphia, Song Birds.
M. Hoepfner, Philadelphia, French and Belgian Canary Birds.
A. M. Dickey, Doylestown, Fowls.
William Brown, Kittanning, variety of Fowls.
J. H. Upperman, Philadelphia, Fowls.
Chas. A. Upperman, Philadelphia, Fowls.
Alidei D. Shuck, Hamburg, Fowls.
J. P. C. Griffiths, Upland, Fowls.
D. Gilpin, Concordville, Fowls.

GROUP XXXVI.—FRUITS, ETC.

Daniel Smeych, Lancaster, Grapes, Apples and Pears.
Samuel Sheeper, Broad Axe, Apples.
Samuel W. Noble, Jenkintown, Apples.
E. N. Wright, (Alexander Cox, Gardener,) School Lane, Germantown, Hot House Grapes.
James Wardrop, Pittsburgh, Seckel Pears.
Berks County Agricultural Society, Apples.

Washington Brookman, Reading, (of Berks County Agricultural Society of Pennsylvania,) White Doyenne or "Butter" Pears.
A. L. Teller, Philadelphia, Collection of Vegetables.
J. M. Helson, Indian Run, Apples.
D. Landreth & Sons, Philadelphia, Winter Vegetables; Roots.
D. Landreth & Sons, Philadelphia, Cereals of the Harvest of 1876.
Abraham Barker, Philadelphia, Pears.
Henry M. Engle, Marietta, Seedling Peaches.
Miss Hettie Trimble, West Chester, Exotic Grapes, under glass.
James S. Jones, Germantown, Strawberries.
Edw. J. Steele, Germantown, Strawberries.
D. Landreth & Sons, Philadelphia, Roots for Cattle Feeding.
Mrs. G. W. Carpenter, Germantown, Peaches.
Daniel Smeych, Lancaster, Peaches.
Frederick Seitz, Sr., Easton, Nectarines.
Alfred S. Sheller, Lewisburg, seventeen varieties of Apples.
P. Kieffer, Angora, Philadelphia, Hybrid Peas.

REPORT OF SPECIAL GROUP.

Machinery (of Exhibition) used by the Bureau of Machinery.

The New York Belting and Packing Company, Philadelphia, Twenty-two-inch Rubber Belt, Hydraulic Annex.
Thomas J. Kover, Philadelphia, Union Belt, No. 3 Annex.
Philadelphia Hydraulic Works, Philadelphia, Pumps, No. 2 Boiler House.
R. J. Barr, Philadelphia, Steam Traps on all steam pipes.
Steam Generator Manufacturing Company, Philadelphia, 100 H. P. Boiler, No. 4 Boiler House.
Harrison Boiler Works, Philadelphia, 100 H. P. Boiler, No. 4 Boiler House.
J. D. Lynde, Philadelphia, 50 H. P. Boiler, No. 4 Boiler House.
C. B. Miller, Philadelphia, 50 H. P. Boiler, No. 4 Boiler House.
Williamson & Bro., Philadelphia, Portable Hoisting Engine, No. 4 Boiler House.
Jones & Laughlins, Pittsburgh, Hangers and Pulleys, Machine Shop.

SPECIAL GROUP.

Riehle Bros., Philadelphia, Testing Machines for Rubber and Leather Belting, and Scales.
The Chalmers Spence Company, Philadelphia, Asbestos Boiler Covering, main steam pipes from No. 4 Boiler House.
John T. Sherrsler, Philadelphia, Improved Felting, main steam pipes from No. 4 Boiler House.
D. N. Snyder, Philadelphia, Felting, main steam pipes from No. 4 Boiler House.
H. J. Lansing, Philadelphia, Safety Railroad Gate, on Narrow Gauge Railroad.
J. E. Mitchell, Philadelphia, Grindstones, Machine Shop.
Wickersham & Bro., Philadelphia, Oil Feeders, Nos. 1, 3, 5 and 7 line of shafts.
S. Lloyd Weigand, Philadelphia, Apparatus for Testing Boilers.

FLOUR MILLING MACHINERY.

C. K. Bullock & Co., Philadelphia, Oscillating Bed Stove Balance, Flour Packer, Middlings Purifier.
Blake & Walton, Philadelphia, Brush with Anti-friction Rollers.
Roland, Frances & Co., Reading, Grain Decorticator and Separator.
Blake & Walton, Germantown, Bran Duster, etc.

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